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Home Economics Research Report No. 30

MEAT, FISH, POULTRY, AND CHEESE:
Home Preparation Time, Yield, and Composition of Various Market Forms

Agricultural Research Service
UNITED STATES DEPARTMENT OF AGRICULTURE

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Home Preparation Time, Yield, and Composition of Various Market Forms

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Human Nutrition Research Division
Agricultural Research Service
UNITED STATES DEPARTMENT OF AGRICULTURE

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COOPERATION

The Marketing Economics Division of the Economic Research Service, U.S. Department of Agriculture, assisted with selection of markets and foods to be included in the study, and provided data on market cost of foods. The Human Nutrition Research Division, U.S. Department of Agriculture, carried out the laboratory research on the agricultural products. The Bureau of Commercial Fisheries, Fish and Wildlife Service, U.S. Department of the Interior, carried out the laboratory research on fish and shellfish products.

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Members of the Bureau of Commercial Fisheries, Fish and Wildlife Service, U.S. Department of the Interior, contributed to the work on fish and seafood products as follows: Barbara J. McCann and Eleanor L. Geissenhainer [1] on preparation and yield of samples; John G. Wangler and Virginia D. Sidwell on proximate composition analyses; and Sue W. Nealis on statistical analyses.

[1] Resigned.

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MEAT, FISH, POULTRY, AND CHEESE: Home Preparation Time, Yield, and Composition of Various Market Forms

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SUMMARY

Preparation time, yield, composition, and other quality characteristics for meat, fish, poultry, and cheese items were investigated in home-prepared and commercially prepared market forms. Thirty-six different kinds of foods in various forms to make a total of 95 food items were included.

Active preparation time for home-prepared foods ranged from less than 1 minute to 54 minutes, depending on the number of ingredients and the complexity of the preparation procedures involved. Less than 10 minutes of active preparation time was needed for preparing four servings of most of the commercial products. Over half of the home-prepared products required more than 25 minutes of active preparation. A wide variety of commercially prepared foods were ready for serving in 15 to 35 minutes total time.

Many of the commercially prepared forms of food lost little of their initial weight during preparation for serving because they required only brief heating, if any, or heating in tightly covered containers. Home-prepared foods usually had lower percentage yields of the edible part of ready-to-eat food than did parallel commercial forms, because of longer cooking times and because most of the preparation losses occurred in the home, whereas in commercial forms losses had occurred before the food reached the retail market.

Meat or fish in a serving of the various commercial forms of foods when ready-to-eat ranged from 0.2 to an estimated 4.2 ounces. In the home-prepared foods, meat or fish in a serving varied from 1.4 to 3.1 ounces. Frozen dinners and main courses had meat or fish content ranging from 1.7 to 4.2 ounces. Sandwiches had 1.1 to 2 ounces of meat filling. A serving of meat or fish pie contained from 0.9 to 1.4 ounces of meat or fish in the various commercial forms. Fish content of the fried breaded foods was 1.4 to 1.7 ounces per serving in the home-prepared items and 1.0 to 1.3 in the commercial forms. Home-prepared combination dishes had 1.6 to 2.2 ounces of meat or fish per serving, and the commercial items had 0.2 to 2.2 ounces.

Limited evaluations of quality characteristics showed that the majority of the commercial products, like the home-prepared products, were attractive in appearance and had good eating quality.

Comparison of the market cost of commercial forms of the foods with the cost of ingredients for the home-prepared items, based on data from the Economic Research Service (collected May 1959 to April 1960), showed that most commercial products cost more than those prepared in the home. However, about one-half of the canned products and one-fifth of the frozen foods that were studied cost slightly less than their home-prepared counterparts. All of these products were in the plain meat or fish or combination dish categories. Foods with high cost ratios, two to two and a half times as much as the home-prepared items, included frozen beef patties, canned chicken meat, most of the frozen dinners, and frozen pizza. Costs were similar for home-prepared and commercial forms of codfish and salmon flakes, haddock sticks, fully cooked ham, beef stew, and deviled crab.

Sandwiches, pies, and fried breaded foods were high in caloric values; combination dishes such as chow mein without noodles were low. For most foods, as expected, caloric values tended to follow fat content. Protein content ranged from 5 percent or less in spaghetti and commercial chow meins to more than 15 percent in most plain meats and fried breaded foods.

Excluding plain meats and fish, which contained essentially no carbohydrate and for which protein furnished more than two-thirds of the caloric value, the proportions of total energy value derived from fat, protein, and carbohydrate were nearly equal.

For all nutrients studied except carbohydrate,

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canned products differed more from their home-prepared counterparts than did frozen or chilled commercial forms. Commercially prepared foods generally had lower fat, protein, and caloric values, and higher ash and carbohydrate contents than did corresponding home-prepared foods. Composition values for most forms of foods were remarkably consistent among the lots analyzed.

INTRODUCTION AND PURPOSE OF THE INVESTIGATION

The widespread use of commercially prepared foods has been a recent development in the United States. As reported by the U.S. Department of Agriculture in 1962 (*2*),[3] Americans now pay about $7.6 billion more than they did in 1940 for more services per unit of food handled. This results largely from more meals eaten away from home, as well as more transportation, packaging, and processing of food.

An important change has been the continually increasing consumption of frozen and canned convenience forms of meat, fish, poultry, and cheese foods. During the 10-year period, 1949 to 1959, the production of frozen prepared foods increased 2,000 percent, from 35 million pounds annually to 700 million pounds (*8*). Of these prepared foods, the major main-dish items were potpies, platters or dinners, fish sticks, and breaded shrimp. Total retail sales in 1960 for these four food types were $290 million. Production of other frozen poultry, meats, and seafoods during the same 10-year period also increased substantially, rising from a total of 415 million pounds in 1949 to 2,525 million pounds in 1959. Canned foods of these types have long been generally available on the retail market; production totals have gone up over the years to 2,309 million pounds of meat products, 1,092 million pounds of fishery products, and 437 million pounds of poultry products in 1960 (*13*).

In addition to frozen and canned foods, chilled ready-to-eat or ready-to-cook items and packaged combination foods have added to the variety of forms of foods in the market. The consumer needs information on preparation time, cost, quality, and nutritive value of the forms of food available to her in order to supply nutritious meals and make best use of available time and money.

Little information is available to help the consumer evaluate the different forms of main-dish foods from which she can choose. Some attention has been given to the relative cost of these foods in their different forms (*9*, *10*, *11*), but little has been published concerning preparation time, yield, or eating quality. From an exploratory study including data from the Human Nutrition Research Division, Weiss (*31*) reported time and money costs and acceptability of meals using home-prepared, partially prepared, and ready-to-serve foods but no data on individual food items. Weiss points out that time and money are critical in management of the home and that few homemakers can ignore them. Consumers Union (*5*) compared different brands of frozen dinners in relation to cost, eating quality, and content of lean meat or fish. Kolmer and Gartner (*15*) included a number of main-dish items in comparative studies on time and money economies from use of market forms of foods in different stages of preparation. Track (*22–28*) evaluated the yield and palatability of a wide variety of frozen main-dish foods.

Information on nutritive composition of different market forms of main-dish foods is also lacking. A few commercial organizations have published data on some canned and frozen products (*3*, *12*). McCance and Widdowson (*17*) have published composition data, primarily calculated from recipes, on some prepared meat, fish, and cheese dishes typical of British diets. Composition values for a few American main-dish foods, also primarily calculated from recipes, have been reported by the U.S. Department of Agriculture (*29*, *30*). In addition, the U.S. Department of the Interior has published composition data based on analyses of cooked fish and shellfish dishes (*16*). Possible differences in nutritive values of different market forms of foods could be an important consideration in choosing between commercial and home-prepared products.

A comprehensive cooperative investigation was undertaken to obtain information on some of the basic factors that contribute to the convenience and satisfaction derived from different forms of food. Phases of this investigation reported previously have dealt with vegetables (*21*), potatoes (*14*), fruits (*4*), and baked products (*18*) in different market forms. Also published elsewhere are the results of companion projects to determine the effect of convenience factors on retail food prices and of case studies to provide data needed to analyze costs of specific services added during processing, wholesaling, and retailing (*2*, *9*, *10*).

This research supplements the meager information presently available on the quality characteristics, yield, composition, and preparation time required for the new types of prepared and partially prepared foods reaching the retail market in increasing kind and amount.

The information obtained in this study will be useful in preparing guides for homemakers and others responsible for planning, selecting, and preparing economical and nutritious diets. Results also will be useful in developing standards for commercially prepared foods on the market, and in supplementing data in food composition tables. The study also will serve as background for further research on this subject.

[3] Italic numbers in parentheses refer to Literature Cited, p. 58.

SCOPE AND PLAN OF WORK

The research reported here deals with the preparation time, yield, quality characteristics, composition, and comparative cost of meat, fish, poultry, and cheese items in several commercially prepared forms and in their home-prepared counterparts. Included were 36 different items of plain meats and fish, dinners and main courses, sandwiches, pies, fried breaded foods, and combination dishes such as chow mein and beef stew.

Commercial forms of foods studied were canned, chilled, frozen, and packaged combinations. For each food, two or more market forms and from one to four brands of each form of food were investigated. Three or more lots were obtained at different times. Each lot included several purchase units, the number depending on the size of the market unit and on the various kinds of evaluations to be carried out. A minimum of 3 and a maximum of 21 market units were needed for any food.

The home-prepared counterparts were made in the laboratory by formulas and procedures typical of those recommended for home use. They appeared to be reasonably comparable to those of the commercial product in kinds of ingredients as indicated on the labels, but not necessarily comparable in proportions of ingredients. Depending on recipe size, ingredients for one to three cooking lots of home-prepared foods were required for one replication of the various tests and analyses. Generally, three replications were made at different times.

All foods were obtained in the Washington, D.C., metropolitan area between December 1958 and December 1960, from two or three retail stores that were under different management and had a high volume of sales locally. Samples of foods in different market forms and ingredients for the home-prepared items were selected at random from the stock available to the consumer.

LABORATORY PROCEDURES AND ANALYTICAL METHODS

Storage of Foods

The foods were transported directly from the market to the laboratory and stored immediately under home conditions. Staple groceries and canned foods were held at room temperature. Perishable foods, such as vegetables, eggs, and dairy products, were held in a refrigerator at 38° F. and frozen foods in a freezer at 0° F. Storage periods varied from 1 to 4 days except for staple groceries, which were stored for slightly longer periods.

Preparation of Food Samples

Formulas and procedures for preparation and cooking of the home-prepared foods and information from the labels and procedures used for the commercially prepared items are given in the appendix. Formulas typical of those recommended for use by families were used for home-prepared foods. Ingredients are listed in the order of combining for home-prepared forms of foods and in the order given on the label for commercial forms.

Ingredients were measured in cups, tablespoons, and teaspoons, as is usually done in the home, in order to establish preparation times. Foods were also weighed to the nearest gram, then converted to ounces (as listed in the appendix), as a basis for determining yield and comparative cost of the foods. Ingredients that weighed less than 0.01 ounce are given as fractions of a teaspoon.

Usually enough food material was prepared on 1 day for all determinations in one replication of a food type.

Preparation Time

Timing of work processes began after equipment and ingredients or samples had been assembled at the work area in order to eliminate differences due to various arrangements of kitchens. Times were recorded in minutes and seconds. Only those processes a homemaker normally uses were timed; for example, the time required for measuring was recorded but not that required for weighing a food or ingredient.

Active preparation time included all time during which full attention was required for activities, such as washing, trimming, and cutting. Total preparation time included the active preparation time and the time taken for procedures that did not require attention, such as thawing and baking.

Physical Separation of Components and Calculation of Yields

The prepared foods were separated insofar as possible into their component parts and weighed to the nearest gram. Gravy or sauce was thoroughly drained from the solid food. The frozen beef barbecue sandwich could not be separated into its component parts because the sauce and meat juices had soaked into the bun. For a few food items, such as chow mein and beef barbecue, some components were in pieces too small to separate with any degree of accuracy.

Percentage yield of cooked food was calculated on the basis of initial weight of the food before cooking or reheating. Percentage of lean meat, fish, or poultry was calculated from the physical

separation data at the ready-to-eat stage of preparation, except for the home-prepared meat and poultry items, which were not separated after preparation. For these, the amount of cooked meat included in the initial item was used in the calculation. Where yield data were already available for the various components of the meat and poultry items (*20*), yields for the home-prepared foods were calculated, and laboratory studies were not included in this research.

Size of serving was specified by weight so that all forms of a recipe type would be calculated on the same basis. The weight selected for each food was considered by the authors as a reasonable serving for that product; in practice, this weight was often the actual size serving recommended for one of the market forms under study. The number of servings from a purchase unit or cooking lot was calculated from the yield of food when ready-to-eat.

Evaluation of Palatability, Packaging, and Use Qualities

Informal evaluations on palatability, packaging, and convenience in use of each food item were made by two or more persons on the professional staffs of the laboratories. Included were estimations of general eating quality and descriptions of the appearance, odor, color, texture, and flavor as a whole or of components where separate as in dinners. Where applicable, the amount of meat, poultry, or fish was recorded in terms of size and shape of the pieces.

Included also were comments on the type and adequacy of the container and the condition of the container when the food was received in the laboratory. Remarks were made in some cases on the adequacy of preparation directions given on the package.

Proximate Composition

Beef, pork, poultry, and cheese dishes were analyzed for proximate composition in the Human Nutrition Research Division (U.S. Department of Agriculture). Fish and shellfish products were analyzed at the Bureau of Commercial Fisheries (U.S. Department of the Interior). The analytical methods employed were those in common use in each laboratory. Although differing in some details for most of the nutrients determined, the procedures gave equivalent results.

Beef, Pork, Poultry, and Cheese Products

Proximate composition determinations were made on 38 kinds and preparation forms of beef, pork, poultry, and cheese products. For each of these foods, composition determinations were made on three separate lots, prepared for most products at approximately 1-month intervals. All of the foods were analyzed in ready-to-eat form. For three lots each of fully cooked hams and 5-pound canned hams, analyses were made on the separated portions of the products as purchased, with no reheating in the laboratory.

Sample preparation.—Approximately 1-pound cooked samples, which had been cooled to room temperature in tightly covered containers so as to avoid moisture loss, were weighed, transferred to enameled tin cans, sealed, and stored at −20° C. until analyzed, usually within 3 months. Before analysis, the sample, while still frozen, was ground three times in a meat grinder to pass a plate having openings of 5-mm. diameter.

With few exceptions, the entire food to be studied was treated as one sample; i.e., vegetables and meat of a frozen plate dinner were ground together. Meat and gravy or drippings from beef patties and sausage were analyzed separately, however, as were skin, meat, and giblets of fried chicken; lean, fat, and drippings of ham; and green beans and meat loaf of frozen meat-loaf main course. All analyses were done in triplicate in at least two separate assay periods.

Moisture.—Samples for moisture determination estimated to contain 1 gram of solids were weighed in shallow 60-mm. aluminum foil dishes and dried overnight at 50° C. in a forced-air oven. Drying was continued to constant weight (44 to 50 hours) in a vacuum oven at 50° C. Loss in weight was reported as the moisture content.

Fat.—For chicken fricassee, fried chicken, pizza, spaghetti, and chow mein noodles, fat was determined both by the acid-hydrolysis procedure of the Association of Official Agricultural Chemists (AOAC) for fat in cereal products (*1*), and by overnight continuous ethyl ether extraction of the dried residues from moisture determinations, using a Soxhlet apparatus. In those few cases for which differences between the two methods were greater than the experimental error, the higher values are reported here. Otherwise, results of the two methods were averaged. For all remaining samples, continuous ethyl ether extraction in a Soxhlet apparatus was the method employed.

Protein.—Total nitrogen was determined by the microkjeldahl method of the AOAC (*1*). The method was modified by distilling into 0.02 *N* hydrochloric acid rather than boric acid, and titrating with 0.02 *N* sodium hydroxide with methyl red as indicator. Factors for converting total nitrogen values to protein were calculated from data on yields of component parts of the various food items, using the appropriate factors for individual foods established by Jones and reported by Merrill and Watt (*19*).

Ash.—Weighed samples were dried, then ashed to constant weight at 600° C.

Carbohydrate.—Total carbohydrate was calculated as the difference between 100 percent and the sum of the percentages of moisture, protein, fat, and ash. This value includes any amounts of crude fiber, organic acids, and other miscellaneous

substances that may be present and contributing to the initial total weight.

Food energy.—Calorie conversion factors were calculated in the same manner as the protein factors, using the energy values established for individual food items (*19*). The appropriate factors were then multiplied by percentages of fat, protein, and carbohydrate to obtain a value for food energy for each product.

Fish and Shellfish Products

Proximate composition determinations were made on 31 kinds and preparation forms of fish and shellfish products. For 30 of these foods, composition determinations were made on three separate lots, prepared within a period of 2 to 6 months. For canned fish flakes only, two lots that were procured 4 months apart were analyzed.

Sample preparation.—Approximately 1-pound samples of the prepared and ready-to-eat foods were ground in a multimixer and stored in glass jars at −10° C. until analyzed. The entire food to be studied was treated as one sample, as was done for most meat, poultry, and cheese products.

Moisture.—Triplicate samples (5 to 15 grams) were weighed into covered aluminum drying cans and dried overnight in a forced-air oven at 105° C. Loss in weight was reported as the moisture content.

Fat.—Fat content was determined, using the combined oven-dried residues from the moisture determinations, by the method of Dambergs (*7*) with slight modifications. The sample was extracted with a mixture of 92 percent acetone and 8 percent water for 4 hours in a Goldfisch fat extraction apparatus. The solvent mixture was then evaporated and the residue dissolved in petroleum ether. This solution was filtered through Whatman No. 42 filter paper, the petroleum ether was evaporated, and the residue was weighed and calculated as fat.

Protein.—Total nitrogen was determined by the macro Kjeldahl method of the AOAC (*1*), modified by using copper sulfate as catalyst and 4 percent boric acid as the collecting solution in the distillation procedure, with subsequent titration against 0.2 *N* hydrochloric acid. Determinations were made in triplicate. Factors for converting total nitrogen values to protein were calculated as described for meat, poultry, and cheese products.

Ash.—Duplicate weighed samples were predried at 250° C. in the muffle furnace, which was then gradually brought to 600° C. and held at that temperature until samples reached constant weight.

Total carbohydrate and energy value.—Carbohydrate and caloric contents of these food items were calculated as previously described for meat, poultry, and cheese products.

RESULTS AND DISCUSSION

Preparation Time

The time required for preparing each of the various forms of most of the foods investigated in this research is included in table 1. The data show the actual time required for a specified amount of each food, either a cooking lot of the home-prepared food or one or more market units of the commercial forms as given in the table. The time needed to prepare four servings of the different forms of the foods, as shown in figures 1 and 2, was calculated to provide a common basis for comparison. Active preparation time was calculated from the data in table 1; total preparation time was adjusted to take into account any changes in active time. Active preparation time included only the processes demanding full attention, whereas total time included active preparation time and all other time required to make the food ready for eating.

Active preparation time required for the various foods (as shown in fig. 1) ranged from less than 1 minute for a single-ingredient food, cook-before-eating ham, to 54 minutes for chicken chow mein, a food composed of many ingredients, some of which required precooking. Over half of the home-prepared products required more than 25 minutes. Time-saving foods were found among the commercial products in every group of foods included in figure 1. The largest differences were between home-prepared and commercial forms of pizza, chicken chow mein, and crabcakes, with savings of from about 40 to 50 minutes of active preparation time for four servings of these foods by using a purchased form. Approximately a half hour of active time was saved by a commercial form of codfish-stick dinner, haddock dinner, fried shrimp, beef stew, chicken fricassee, deviled crab, shrimp creole, and tuna pie. Most of these are complex foods containing a variety of ingredients and involving complicated preparation procedures. Smallest differences in active preparation time were between home-prepared and commercial forms of ham and fish flakes, with no difference in time required for home-prepared and chilled hams and only 2 minutes saved by using canned fish flakes.

Less than 10 minutes of active preparation time was needed for most of the commercial products; many required less than 5 minutes. Only two commercial forms of foods—cooked chilled crabmeat and pizza in the packaged combination—took longer than 20 minutes of active time.

Differences in active time between the various commercial forms of the foods studied ranged from only 1 or 2 minutes to 22 minutes. Canned and frozen sausage required approximately equal amounts of active time, as did the canned and

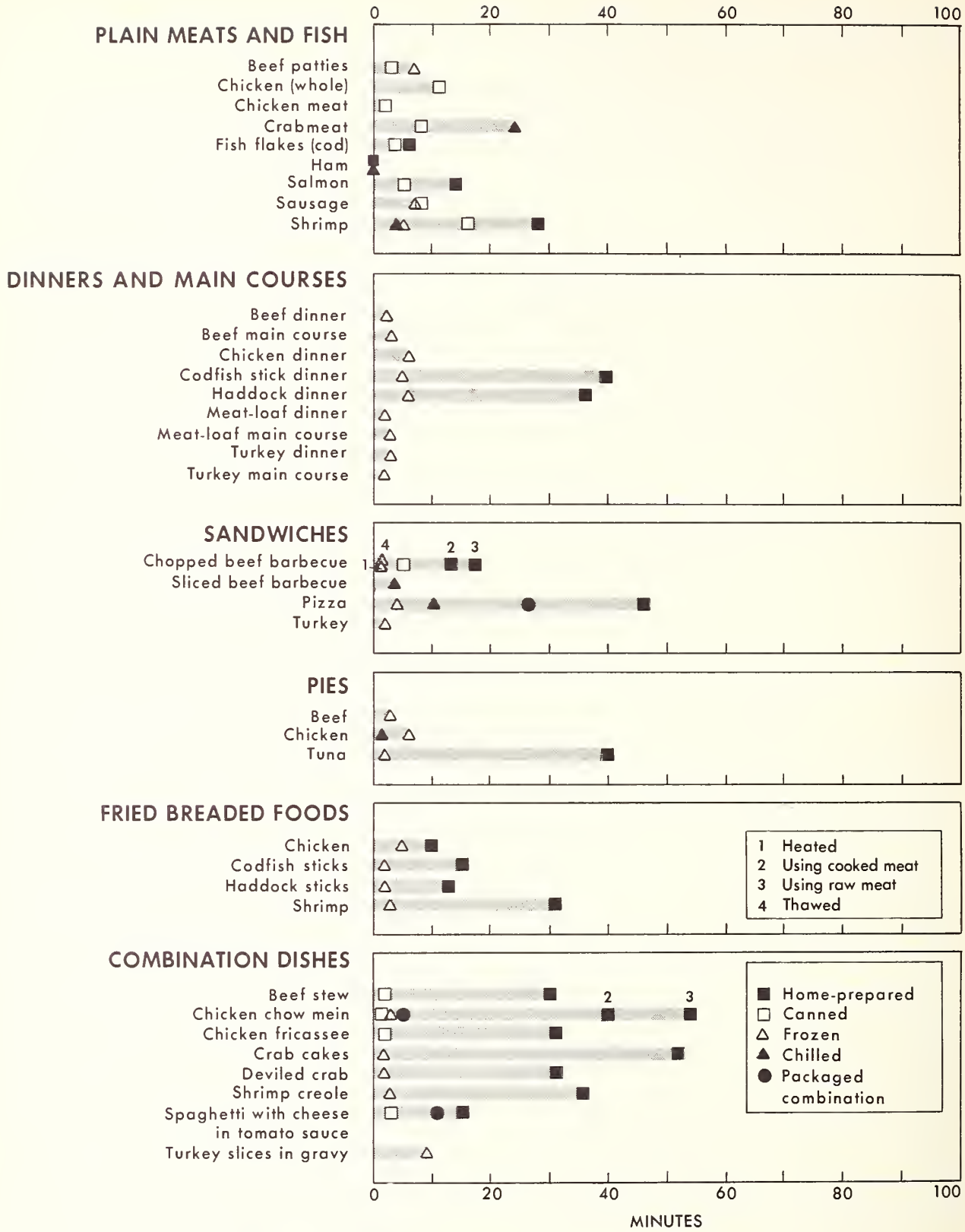

FIGURE 1.—Active preparation time for four servings of home-prepared and commercial forms of meat, fish, poultry, and cheese items.

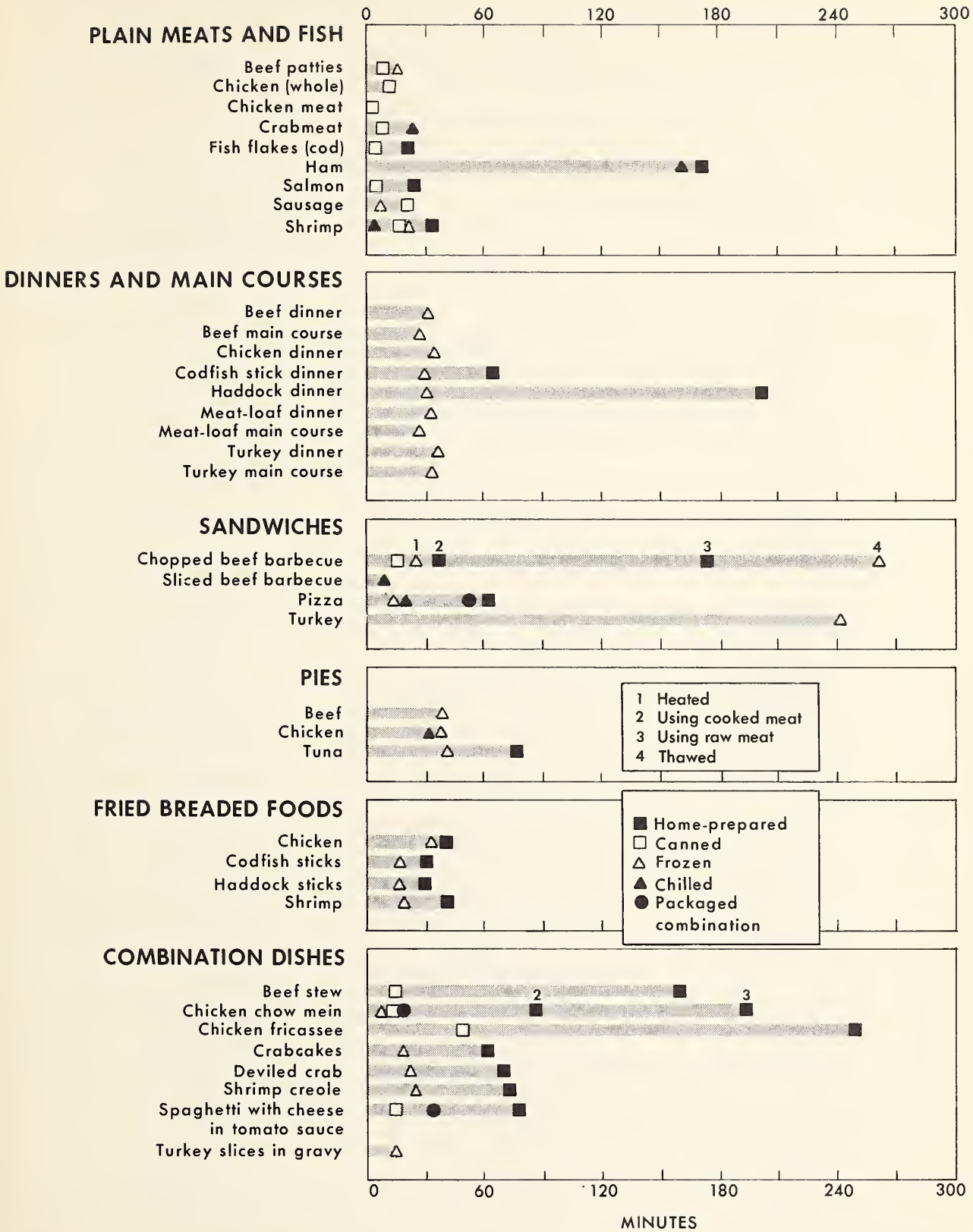

FIGURE 2.—Total preparation time for four servings of home-prepared and commercial forms of meat, fish, poultry, and cheese items.

TABLE 1.—*Preparation time for beef, fish and shellfish, pork, poultry, and cheese products* [1]

Identification number [2]	Name and form of food	Size of sample		Preparation time					
		Amount	Number of servings	Active [3]			Total		
				Hours	*Minutes*	*Seconds*	*Hours*	*Minutes*	*Seconds*
	Beef:								
	Beef barbecue sandwich (chopped beef):								
1	Home-prepared:								
	Using raw meat	1 cooking lot	6.2	------	26	24	3	3	54
	Using cooked meat	1 cooking lot	6.2	------	20	------	------	42	------
	Purchased:								
2	Canned	1 can	3.4	------	3	59	------	13	59
3	Frozen:								
	Thawed	1 package	2.0	------	------	21	4	22	42
	Heated	2 packages	4.0	------	1	12	------	26	12
	Beef barbecue sandwich (sliced beef):								
5	Purchased, chilled	1 package	2.5	------	2	7	------	7	7
	Beef dinner:								
7	Purchased, frozen	1 dinner	1.0	------	------	31	------	30	31
	Beef main course:								
9	Purchased, frozen	1 main course	1.0	------	------	38	------	25	38
	Beef patties:								
	Purchased:								
11	Canned	1 can	3.2	------	2	22	------	7	39
12	Frozen	1 package	2.1	------	3	31	------	12	31
	Beef pie:								
14	Purchased, frozen	1 pie	1.0	------	------	42	------	36	57
	Beef stew:								
15	Home-prepared	1 cooking lot	6.3	------	47	4	2	57	4
16	Purchased, canned	1 can	2.8	------	1	5	------	13	2
	Meat-loaf dinner:								
18	Purchased, frozen	1 dinner	1.0	------	------	25	------	30	25
	Meat-loaf main course:								
20	Purchased, frozen	1 main course	1.0	------	------	43	------	25	46
	Fish and shellfish:								
	Codfish-stick dinner:								
21	Home-prepared	4 dinners	3.9	------	37	54	1	4	56
22	Purchased, frozen	3 dinners	3.0	------	3	53	------	28	53
	Codfish sticks, fried:								
23	Home-prepared	1 cooking lot	5.8	------	21	49	------	37	10
24	Purchased, frozen	2 packages	6.0	------	3	43	------	18	20
	Fish flakes:								
	Home-prepared:								
25	From frozen cod fillets	1 cooking lot	5.0	------	7	35	------	21	32
26	From frozen haddock fillets	1 cooking lot	4.6	------	8	3	------	20	36
27	Purchased, canned	2 cans	6.0	------	5	15	------	5	15
	Haddock dinner:								
28	Home-prepared	4 dinners	3.9	------	35	50	3	22	16
29	Purchased, frozen	3 dinners	3.0	------	4	12	------	29	12
	Haddock fish sticks, fried:								
30	Home-prepared	1 cooking lot	6.2	------	20	15	------	36	14
31	Purchased, frozen	2 packages	6.0	------	3	10	------	18	10
	Salmon:								
32	Home-prepared	1 cooking lot	6.2	------	19	31	------	32	1
33	Purchased, canned	1 can	6.0	------	7	51	------	7	51
	Tuna pie:								
34	Home-prepared	8 pies	8.0	1	19	48	1	54	48
35	Purchased, frozen	3 pies	3.0	------	1	39	------	40	2
	Crabcakes:								
36	Home-prepared	1 cooking lot	6.2	1	20	42	1	30	54
37	Purchased, frozen	3 packages	6.0	------	3	36	------	18	4
	Crabmeat:								
	Purchased:								
38	Cooked, chilled	1 container	8.3	------	50	15	------	50	15
39	Canned	2 cans	6.0	------	12	15	------	12	15
	Deviled crab:								
40	Home-prepared	1 cooking lot	8.5	1	6	31	1	44	38

See footnotes at end of table.

TABLE 1.—*Preparation time for beef, fish and shellfish, pork, poultry, and cheese products* [1]—Continued

Identification number [2]	Name and form of food	Size of sample		Preparation time					
		Amount	Number of servings	Active [3]			Total		
				Hours	*Minutes*	*Seconds*	*Hours*	*Minutes*	*Seconds*
	Fish and Shellfish—Continued								
	Deviled crab—Continued								
41	Purchased, frozen	3 packages	6. 0	------	2	33	------	23	------
	Shrimp:								
	Home-prepared:								
42	From raw shrimp in shell	1 cooking lot	4. 4	------	31	20	------	45	50
	Purchased:								
43	Canned	2 cans	4. 0	------	16	11	------	16	11
44	Chilled, cooked, peeled, deveined.	1 cooking lot	6. 9	------	7	43	------	7	43
45	Frozen, raw, peeled, deveined	2 packages	4. 1	------	4	50	------	20	40
	Shrimp, breaded, fried:								
	Home-prepared:								
46	From raw shrimp in shell	1 cooking lot	5. 2	------	40	4	------	50	------
47	From raw, peeled, deveined, frozen shrimp.	2 packages	5. 2	------	27	16	------	43	37
	Purchased:								
48	Frozen, raw, breaded	1 package	5. 4	------	6	40	------	19	56
49	Frozen, prefried	2 packages	4. 0	------	3	9	------	18	31
	Shrimp creole:								
50	Home-prepared	1 cooking lot	6. 6	------	58	50	1	35	28
51	Purchased, frozen	3 packages	3. 0	------	2	20	------	24	20
	Pork:								
	Ham, cured:								
	Home-prepared:								
52	Cook-before-eating	1 ham	27. 3	------	3	------	2	55	------
	Purchased:								
53	Fully cooked, chilled	1 ham	27. 9	------	2	------	2	43	------
	Sausage, pork:								
	Purchased:								
59	Canned	1 can	2. 1	------	4	17	------	17	17
60	Frozen	1 package	3. 2	------	5	21	------	5	21
	Poultry:								
	Chicken, whole:								
62	Purchased, canned	1 can	7. 0	------	20	------	------	20	------
	Chicken meat:								
64	Purchased, canned	1 can	2. 0	------	1	------	------	1	------
	Chicken chow mein:								
65	Home-prepared:								
	Using raw meat	1 cooking lot	3. 9	------	54	19	3	13	29
	Using cooked meat	1 cooking lot	3. 9	------	39	41	1	26	31
	Purchased:								
66	Canned	1 can	2. 9	------	1	17	------	11	17
67	Frozen	1 package	3. 6	------	2	49	------	26	7
69	Packaged combination	1 package	3. 0	------	3	31	------	13	31
	Chicken dinner:								
71	Purchased, frozen	1 dinner	1. 0	------	1	36	------	29	54
	Chicken fricassee:								
72	Home-prepared	1 cooking lot	6. 3	------	49	24	4	28	24
73	Purchased, canned	1 can	3. 3	------	1	21	------	46	31
	Chicken, fried:								
	Home-prepared:								
	Flour-coated:								
74	From chilled chicken	1 chicken	7. 6	------	12	------	------	51	------
	Batter-dipped:								
75	From chilled chicken	1 chicken	7. 4	------	18	------	------	48	------
76	From frozen chicken	1 package	5. 0	------	19	59	------	49	59
	Purchased, frozen, prefried:								
77	Batter-dipped	1 package	4. 2	------	5	16	------	34	33
	Chicken pie:								
	Purchased:								
79	Chilled	1 pie	1. 8	------	------	20	------	30	20
80	Frozen	1 pie	1. 0	------	1	25	------	31	25
	Turkey dinner:								
82	Purchased, frozen	1 dinner	1. 0	------	------	45	------	33	15

See footnotes at end of table.

TABLE 1.—*Preparation time for beef, fish and shellfish, pork, poultry, and cheese products* [1]—Continued

Identification number [2]	Name and form of food	Size of sample		Preparation time					
		Amount	Number of servings	Active [3]			Total		
				Hours	*Minutes*	*Seconds*	*Hours*	*Minutes*	*Seconds*
	Poultry—Continued								
	Turkey, main course:								
84	Purchased, frozen	1 main course	1.0	------	------	30	------	30	30
	Turkey sandwich:								
86	Purchased, frozen	1 package	2.0	------	1	7	[4] 4	1	7
	Turkey slices in gravy:								
88	Purchased, frozen	1 package	1.0	------	2	22	------	6	33
	Cheese:								
	Pizza:								
89	Home-prepared	1 pizza	2.6	------	29	41	------	45	58
	Purchased:								
90	Chilled	1 pizza	1.0	------	2	25	------	12	25
91	Frozen	1 pizza	2.0	------	1	59	------	11	59
92	Packaged combination	1 pizza	1.9	------	12	16	------	37	16
	Spaghetti with cheese in tomato sauce:								
93	Home-prepared	1 cooking lot	6.4	------	24	8	1	25	52
	Purchased:								
94	Canned	1 can	1.7	------	1	22	------	11	22
95	Packaged combination	1 package	4.2	------	11	38	------	35	2

[1] Data on agricultural products were obtained by Human Nutrition Research Division (USDA); on fish and shellfish products, by Bureau of Commercial Fisheries (USDI).

[2] All samples are numbered; only those for which preparation times are available appear in this table. Sample numbers correspond to those in tables 2–6 and tables 8–12.

[3] Active preparation time includes all the time during which full attention was required.

[4] Includes thawing time.

frozen forms of chow mein. On the other hand, chilled cooked crabmeat required three times as long to drain and remove cartilage as did canned crabmeat; canned shrimp, which required deveining, took almost four times as long as the deveined frozen and chilled forms. Also, the crust for the packaged pizza combination had to be made in the home, whereas frozen and chilled pizzas were ready for baking; and the packaged spaghetti combination required that the homemaker cook the spaghetti and the meat sauce, whereas the canned form required only heating.

Total preparation time represents the time required to make the food ready for serving. Commercial forms of foods that saved substantial amounts of preparation time were found in all of the recipe categories but particularly among the combination dishes. The time saved ranged from only 5 minutes for the prefried breaded chicken to more than 3 hours for canned chicken fricassee or canned or packaged combination forms of chow mein, unless cooked chicken were available for home-prepared chow mein. More than 2 hours were saved with the frozen haddock dinner and canned beef stew.

Using frozen foods that require thawing before use in home-prepared counterparts, as frozen haddock in the dinner, increases total preparation time for these products and thus widens the difference in total time between the home-prepared and commercial forms.

A few commercially prepared forms took more time than the home-prepared food. For example, the frozen barbecue sandwich took more time to thaw at room temperature than was required to make the home-prepared form, starting with either raw or cooked meat (fig. 2). However, the frozen sandwich could be heated in less time than that required for making the home-prepared barbecue sandwich.

The total preparation time required for various commercial forms of a food differed by as much as 37 minutes between frozen and packaged combination pizzas and 21 minutes between canned and packaged combination spaghetti and cheese with tomato sauce; however, most differences between commercial foods were less than 15 minutes.

A number of commercial forms of foods, particularly canned items, required less than 15 minutes; the majority required 35 minutes or less total preparation time. Fully-cooked (chilled) ham, when reheated, and frozen beef or turkey sandwiches thawed at room temperature required the most total time of all the commercial forms studied. However, active preparation time for these products was very short (less than 1 minute), making them easy to fit into many homemakers' work schedules.

A few of the commercial foods investigated offer the homemaker an option in preparation procedures, which may enable her to plan her

work schedules and use of equipment advantageously. Fully cooked and canned hams, for instance, may be sliced and served without heating or may be reheated and served hot. Frozen sandwiches may be served after thawing for 4 to 5 hours, or after heating from the frozen state for 25 minutes, as was done in this experiment.

Components and Yield of Ready-to-Eat Food

Tables 2, 3, 4, 5, and 6 contain data on the components and yield of ready-to-eat food for the different types of beef, fish, pork, poultry, and cheese products, respectively. Recipes usually called for ingredients prepared to the point at which they would be combined. Therefore, losses from trimming, paring, peeling, boning, or other procedures required for precooking preparation of raw ingredients often are not reflected in these data. Components of home-prepared and purchased forms of a food are listed in a comparable manner; individual ingredients are given for home-prepared foods only in cases where the ingredients were known in one or more forms of the purchased food.

Gravy was included in the yield of ready-to-eat food as it normally would be served over the food. Gelatin, broth, and brine in which some of the foods are packed were excluded in calculating the yield. Drippings, bone, fat, shell, and inedible skin also were excluded.

The percentage yields of ready-to-eat food based on the weight of the initial item for the foods under study and classified by recipe type—plain meats and fish, dinners and main courses, sandwiches, pies, fried breaded foods, and combination dishes—are shown in figure 3.

For most of the foods investigated, commercially prepared forms yielded high percentages of ready-to-eat food with less shrinkage during cooking than the home-prepared forms. Cooking losses tended to be greater from the home-prepared items because these foods usually were cooked from the raw state or included some raw ingredients. Thus, cooking times were often long, and losses by evaporation and as drippings or broth were considerable. Also, the home-prepared foods generally sustained greater losses from discard of bone, cartilage, fat, and skin than did commercially prepared foods.

Initial preparation and cooking losses of the partially and fully prepared items had occurred before the food reached the retail market. Most of these foods lost little of their initial weight during preparation for serving. Many were heated only to serving temperature, some were heated in tightly covered containers, and a few were used without heating.

Plain Meats and Fish

The greatest range in yields of edible cooked food was observed in plain meats and fish. Yields for commercially prepared foods in this group ranged from 37 to 95 percent and for home-prepared foods from 45 to 78. Differences in yields are not surprising because some plain meats and fish had large losses from bone, skin, shell, brine, broth, or evaporation and drippings, whereas others did not.

Among the commercially prepared plain meats, the relatively low yields of 37 percent for canned whole chicken, 52 percent for fully cooked (chilled) ham, 52 percent for frozen beef patties, and 55 percent for canned sausage are explained by losses of liquids. In canned whole chicken, broth comprised about 50 percent and bone 12 percent of the contents of a can. The largest loss from fully cooked ham was 24 percent in the form of separable fat; evaporation and drippings averaged about 19 percent of the initial weight. Frozen beef patties had high cooking losses totaling 48 percent from evaporation and drippings. Previous studies have shown that the losses in cooking raw, unfrozen ground beef can be as much as 42 percent, depending on the composition of the meat and the cooking method (*20*). In this study, broth in the canned sausage averaged 28 percent and cooking losses 16 percent. Cooking losses for link sausage lowered the yield to 45 percent.

Among the fish products in this group, some of the largest losses came from discarding shells or brine or melting of the ice glaze used as a protective coating of shrimp during frozen storage. Yields of around 60 percent edible cooked food were obtained for the following: Raw shrimp in the shell; frozen raw, peeled, deveined shrimp; and canned shrimp. The chilled, cooked, peeled, deveined shrimp had a yield of 95 percent. Fish flakes, home-prepared from cod fillets, averaged 65 percent yield compared to 90 percent yield from the canned form.

Dinners and Main Courses

Yields of frozen dinners and main courses when ready-to-eat ranged from 88 to 100 percent of the initial weight as compared to 65 to 95 percent for home-prepared dinners. The french-fried potatoes in the home-prepared codfish-stick dinner lost 45 percent of their weight during cooking; french-fried fish sticks, 38 percent. Therefore, this dinner as a whole had a yield of only 65 percent.

Sandwiches

Yields of home-prepared beef barbecue and turkey sandwiches, ranging from 94 to 100 percent, were comparable to the commercial forms with yields from 95 to 100 percent because all were based on the use of cooked meat. About 33 percent loss would have been sustained previously in cooking a boneless pot roast of beef, and about 45 percent in roasting and boning a turkey to provide the cooked meat.

Yield of pizzas in the various forms ranged from 80 to 97 percent. Differences in yield probably result from different moisture losses due to baking conditions and surface areas of the various forms of pizza.

Pies

The meat and fish pies illustrate a type of food that has a relatively high percentage yield because a cooked filling is used and the crust acts as a cover to limit evaporation losses. Yields for commercially prepared frozen pies ranged from 93 to 99 percent; for home-prepared pies, from 84 to 94 percent.

Fried Breaded Foods

Fried breaded foods had fairly wide ranges in yields, from 73 to 92 percent for commercial products and from 47 to 70 percent for the home-prepared foods. The lowest yields in this group were for home-prepared foods and for frozen, raw breaded shrimp (not shown in fig. 3). Evaporation losses for these foods were large because the raw foods were fried in deep fat at high temperatures and the home-prepared batter-dipped chicken was further cooked uncovered in the oven. Losses from heating frozen prefried chicken in the oven were negligible (3 percent); bones accounted for most of the other losses from this product.

Breaded fried shrimp made from frozen, raw, peeled shrimp (not shown) gave a yield 11 percentage points higher than that from raw shrimp in the shell. The tails as well as the shell of the frozen form had been removed before purchase, and the loss in weight from ice in the package had been discounted before the weights were taken in preparation for frying. Frozen, raw, breaded shrimp (not shown) had a yield 6 percentage points below that of the frozen prefried form.

Combination Dishes

All commercially prepared combination dishes yielded over 90 percent ready-to-eat food. Yields of home-prepared combination dishes also were reasonably high, ranging from 72 percent for beef stew to 90 percent for deviled crab. Exceptions were home-prepared chicken fricassee and turkey slices in gravy, both of which had considerable preparation losses due to cooking and boning. Losses for most of these foods were mainly from evaporation during cooking. High losses usually were related to long cooking times. Yield of home-prepared chicken fricassee was 55 percent as compared to 98 for the canned form, and yield of home-prepared turkey slices in gravy was 62 percent compared to 99 percent for the frozen form reheated in a plastic bag.

Because noodles were included in the chicken chow mein packaged combination, the same proportion of noodles was used in calculating yield data for the other forms. There was almost no loss in heating any of the purchased forms (yield 99 percent), whereas 14 percent of the initial weight of the home-prepared chow mein, although made with cooked chicken, was lost in cooking.

Yield of Different Brands

Data on variation among brands of four frozen-food products—beef pies, chicken pies, chicken dinners, and turkey dinners—and one canned food—braised, whole chicken—are given in table 7.

In beef pies, the beef in one serving of the different brands comprised from 15 to 20 percent of the weight of the ready-to-eat pie. Differences in weight of pastry in the different brands are largely explained by the fact that some were 2-crust pies and others had only a top crust. The percentages by weight of vegetables, 7 to 8 percent, included in these pies were similar in the various brands.

In the chicken pies, weights for the pastry were comparable to those in the beef pies, with corresponding differences between 1- and 2-crust pies. Two of the three brands of chicken pies contained lower percentages of lean meat than the beef pies; the chicken ranged from 12 to 17 percent of the weight of the pies. Track (*26*, *27*), investigating two brands of larger sized chicken pies, found chicken in amounts equivalent to 17 and 27 percent in the ready-to-eat pie.

In the chicken dinners, the pieces of chicken comprised approximately half of the total weight. The kinds of pieces varied somewhat, but the lean meat in the various brands differed only 2 percentage points. All three brands of chicken dinners contained mashed potatoes, but the other vegetables differed. The mashed potatoes in the various dinners were comparable, 31 to 33 percent. The other vegetables comprised 18 percent of Brand A, 15 percent of Brand B, and 21 percent of Brand C.

Both brands of frozen turkey dinners, one labeled 11 ounces and the other 12 ounces, had the same components—sliced turkey, dressing, peas, potatoes, and gravy—except that in one the potatoes were boiled; in the other they were mashed. The 12-ounce dinner contained less turkey, on the average, than the 11-ounce dinner—19 percent compared to 26 percent of the ready-to-eat food. The percentages of dressing were similar; the 12-ounce dinner contained a slightly smaller percentage of vegetables and more gravy than the 11-ounce dinner.

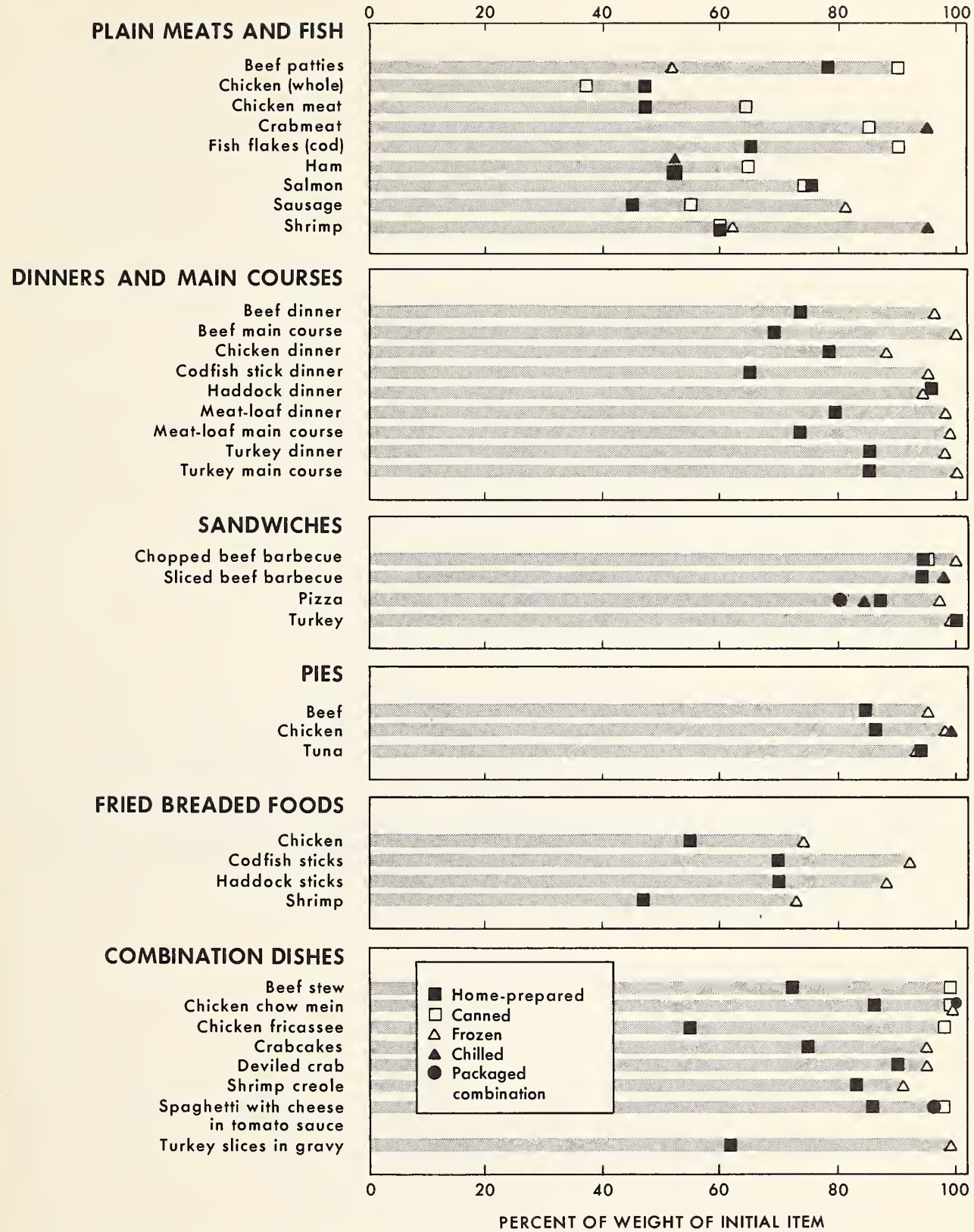

FIGURE 3.—Percentage yield of edible part of ready-to-eat food from home-prepared and commercial forms of meat, fish, poultry, and cheese items.

TABLE 2.—BEEF PRODUCTS: *Components, yield of ready-to-eat food, and number of servings*

Identification number [1]	Name and form of food [2]	Number of samples	Description of initial item, weight on label, and components	Ready to cook or reheat	Ready to eat [3]					
					Mean weight	Range in weight	Yield of edible food [4]	Lean meat content [5]	Weight of one serving	Servings per purchase unit or cooking lot
	Beef barbecue sandwich (chopped beef):			*Ounces*	*Ounces*	*Ounces*	*Percent*	*Percent*	*Ounces*	*Number*
1	Home-prepared	6	Beef filling and buns	32.0	30.3		94	35	[6] 4.9	6.2
			Beef filling		22.2	21.2 to 22.6				
			Beef, cooked	10.5						
			Sauce	13.4						
			Buns, ready-to-eat	8.1						
	Purchased:									
2	Canned	3	Beef filling and buns	17.2	16.3		95	42	[6] 4.9	3.4
			Beef filling (12-oz. can)	12.0	11.1	10.6 to 11.6				
			Beef	6.9	6.8	6.5 to 7.0				
			Sauce (by difference)	5.1	4.3					
			Buns, ready-to-eat [7]	5.2	5.2					
3	Frozen	15	Beef filling in buns (8-oz. package, 2 sandwiches). [8]	9.7	9.7	9.4 to 10.6	100		4.9	2.0
	Beef barbecue sandwich (sliced beef):									
4	Home-prepared [9]		Beef in sauce and buns (components same as item 1).	32.0	30.3		94	35	[6] 4.9	6.2
5	Purchased, chilled	3	Beef in sauce and buns	12.3	12.1		98	38	[6] 4.9	2.5
			Beef in sauce (8-oz. bag)	8.4	8.2	7.9 to 8.5				
			Beef		4.6	4.4 to 5.0				
			Sauce (by difference)		3.6					
			Buns, ready-to-eat [7]	3.9	3.9					
	Beef dinner:									
6	Home-prepared [9]		Beef, gravy, vegetables	15.5	11.3		73	31	11.3	1.0
7	Purchased, frozen	3	Beef, gravy, vegetables (11-oz. dinner).	11.8	11.3	10.5 to 12.2	96	31	11.3	1.0
			Beef, sliced		3.6	3.1 to 4.1				
			Gravy (by difference)		2.8					
			Potatoes, mashed		2.6	2.4 to 2.7				
			Peas		1.8	1.7 to 1.9				
			Carrots, sliced		.5	0.4 to 0.6				
	Beef main course:									
8	Home-prepared [9]		Beef, gravy, potatoes	13.0	9.0		69	40	9.0	1.0
9	Purchased, frozen	9	Beef, gravy, potatoes (8½-oz. main course).	9.0	9.0	7.6 to 10.3	100	40	9.0	1.0
			Beef, sliced		3.6	3.0 to 5.0				
			Gravy (by difference)		2.5					
			Potatoes, boiled		2.9	1.9 to 3.9				
	Beef patties:									
10	Home-prepared [9]		Beef patties	5.4	4.2		78	100	2.0	2.1

	Purchased:									
11	Canned	21	Beef patties in gravy (11-oz. can).	10.9	9.8	8.1 to 10.7	90	65		
			Beef		6.4	5.9 to 7.0			2.0	3.2
			Gravy (by difference)		3.4					
12	Frozen	16	Beef patties (8-oz. package)	8.0	4.2	3.6 to 4.7	52	100	2.0	2.1
			Drippings (by difference)		1.3					
	Beef pie:									
13	Home-prepared	6	Beef, vegetables, gravy, pastry (9-in. pie).	26.7	22.4	20.3 to 23.8	84	22	7.6	2.9
			Filling, cooked	20.3						
			Filling ingredients	21.1						
			Beef, cooked, cubed	5.0						
			Carrots, cubed	1.8						
			Onions, chopped	.4						
			Potatoes, cubed	1.9						
			Peas, frozen	1.8						
			Gravy, cooked	10.2						
			Pastry	6.4						
14	Purchased, frozen	9	Beef, vegetables, gravy, pastry (8-oz., 5-in. pie).	8.0	7.6	7.4 to 8.0	95	16	7.6	1.0
			Beef		1.2	1.0 to 1.5				
			Carrots		.3	0.2 to 0.4				
			Onions		.1	0.1 to 0.2				
			Potatoes							
			Peas		.2	0.1 to 0.5				
			Gravy (by difference)		3.6					
			Pastry		2.2	2.0 to 2.4				
	Beef stew:									
15	Home-prepared	5	Beef, vegetables, gravy	75.2	53.9	50.5 to 56.0	72		8.6	6.3
			Beef	15.8	[9] 10.3					
			Carrots, sliced	8.5						
			Onions, sliced	5.6						
			Potatoes, sliced	13.6						
			Peas, frozen	4.9						
			Gravy	26.8						
16	Purchased, canned	6	Beef, vegetables, gravy (24-oz. can).	24.8	24.5	23.9 to 24.9	99	15	8.6	2.8
			Beef		3.7	2.6 to 4.9				
			Carrots		1.9	0.9 to 2.3				
			Onions							
			Potatoes		5.3	2.9 to 6.6				
			Gravy (by difference)		13.6					
	Meat-loaf dinner:									
17	Home-prepared [9]		Meat-loaf dinner	14.5	11.4		79	32	11.4	1.0
			Meat loaf (beef and pork)	7.4	4.8					
18	Purchased, frozen	3	Meat-loaf dinner (11-oz. dinner).	11.7	11.4	11.0 to 11.7	98	[10](32)	11.4	1.0
			Meat loaf (beef and pork)		4.8	4.7 to 4.9				
			Tomato sauce (by difference).		1.7					
			Potatoes, mashed		2.7	2.6 to 2.8				
			Mixed vegetables		2.2	1.8 to 2.5				
			Peas		.7	0.7 to 0.8				
			Corn, kernel		.6	0.5 to 0.7				
			Carrots, diced		.5	0.4 to 0.5				
			Lima beans		.2	0.1 to 0.3				
			Green beans		.2	<0.2 to 0.2				

See footnotes at end of table.

TABLE 2.—BEEF PRODUCTS: *Components, yield of ready-to-eat food, and number of servings*—Continued

Identification number [1]	Name and form of food [2]	Number of samples	Description of initial item, weight on label, and components	Ready to cook or reheat	Ready to eat [3]					
					Mean weight	Range in weight	Yield of edible food [4]	Lean meat content [5]	Weight of one serving	Servings per purchase unit or cooking lot
				Ounces	*Ounces*	*Ounces*	*Percent*	*Percent*	*Ounces*	*Number*
	Meat-loaf main course:									
19	Home-prepared [9]		Meat loaf and vegetables	13.4	9.8		73	44	9.8	1.0
			Meat loaf (beef and pork)	8.6	5.7					
20	Purchased, frozen	14	Meat loaf and vegetables (9.75-oz. main course).	9.8	9.7	9.1 to 10.5	99	[10](44)	9.8	1.0
			Meat loaf (beef and pork)		5.6	5.3 to 6.1				
			Tomato sauce (by difference).		1.6					
			Green beans		2.5	1.8 to 3.3				

[1] Sample numbers correspond to those in tables 1 and 8.
[2] Home-prepared refers to foods prepared in the laboratory by formulas and procedures typical of those recommended for home use.
[3] Calculated on original data before rounding to 1 decimal place.
[4] Based on weight of initial item. Includes gravy; excludes drippings.
[5] Weight of cooked lean meat divided by weight of ready-to-eat food and expressed as percentage.
[6] One serving calculated using 1.35 oz. for weight of one bun and 3.51 oz. for weight of beef filling.
[7] Not included in this form of the food as purchased.
[8] Thawed only; not heated.
[9] Calculated from Agr. Handb. 102, "Food Yields Summarized by Different Stages of Preparation" (*20*) and from laboratory data. Components calculated on basis of purchased form.
[10] Estimated lean meat content calculated on basis of formula comprised of 75 percent raw meat.

TABLE 3.—FISH AND SHELLFISH PRODUCTS: [1] *Components, yield of ready-to-eat food, and number of servings*

Identification number [2]	Name and form of food [3]	Number of samples	Description of initial item, weight on label, and components	Ready to cook or reheat	Ready to eat [4]					
					Mean weight	Range in weight	Yield of edible food [5]	Fish content [6]	Weight of one serving	Servings per purchase unit or cooking lot
				Ounces	*Ounces*	*Ounces*	*Percent*	*Percent*	*Ounces*	*Number*
21	**Codfish-stick dinner:** Home-prepared	3	Fish-stick dinner	48.6	31.8	30.4 to 32.5	65	28	8.2	3.9
			Cod sticks	24.7	15.5					
			Cod fillets, skinless (four 1-lb. dinners).	15.4	9.0					

			Coating	7.2	5.8					
			Fat consumed in frying	2.1						
			Handling loss		.7					
			Potatoes	13.0	7.1					
			Fat consumed in frying	.8						
			Peas	10.1	9.2					
22	Purchased, frozen	3	Fish-stick dinner (8-oz. dinner).	8.6	8.2	7.6 to 8.9	95	21	8.2	1.0
			Cod sticks		4.1					
			Cod fillets		1.7					
			Coating		2.4					
			Handling loss		<.1					
			Potatoes		1.9					
			Peas		2.2					
	Codfish sticks, fried:									
23	Home-prepared	3	Cod sticks	21.5	15.0	12.4 to 17.0	70	67	2.6	5.8
			Cod fillets, skinless (1-lb. package, 20 sticks).	16.1	10.0					
			Coating	3.4	4.3					
			Fat consumed in frying	2.0						
			Handling loss		.7					
24	Purchased, frozen	3	Fried codfish sticks (two 8-oz. packages, 20 sticks).	16.9	15.6	14.8 to 16.9	92	51	2.6	6.0
			Cod fillets		7.9					
			Coating		7.2					
			Handling loss		.5					
	Fish flakes:									
	Home-prepared:									
25	From frozen cod fillets.	3	Cod flakes		11.2	10.9 to 11.4	65	100	2.2	5.0
			Cod fillets, skinless (16-oz. package).	17.2						
26	From frozen haddock fillets.	3	Haddock flakes		10.5	9.8 to 11.6	68	100	2.2	4.6
			Haddock fillets, skinless (16-oz. package).	15.4						
27	Purchased, canned	3	Canned cod and/or haddock fish flakes (two 7-oz. cans).	15.0			90	100	2.2	6.0
			Cod flakes	13.5	13.5	13.0 to 13.8				
			Brine	1.5						
	Haddock dinner:									
28	Home-prepared	3	Haddock, sauce, vegetables (4 dinners).	48.1	45.5	43.5 to 46.6	95	27	11.5	3.9
			Haddock fillets, skinless, thawed.	13.0	12.4					
			Sauce, cooked	12.6	12.0					
			Mashed potatoes	12.5	12.0					
			Peas (10-oz. package)	10.0	9.1					
29	Purchased, frozen	3	Haddock, sauce, vegetables (12-oz. dinner).	12.3	11.5	10.6 to 12.4	94	32	11.5	1.0
			Haddock fillets		3.6					
			Sauce		2.5					
			Mashed potatoes		3.2					
			Peas		1.9					
			Handling loss		.3					

See footnotes at end of table.

TABLE 3.—FISH AND SHELLFISH PRODUCTS: [1] *Components, yield of ready-to-eat food, and number of servings*—Continued

Identification number [2]	Name and form of food [3]	Number of samples	Description of initial item, weight on label, and components	Ready to cook or reheat	Ready to eat [4]					
					Mean weight	Range in weight	Yield of edible food [5]	Fish content [6]	Weight of one serving	Servings per purchase unit or cooking lot
	Haddock fish sticks, fried:			*Ounces*	*Ounces*	*Ounces*	*Percent*	*Percent*	*Ounces*	*Number*
30	Home-prepared		Haddock sticks	20.9	14.6	14.5 to 14.6	70	69	2.4	6.2
			Haddock fillets, skinless (16-oz. package, 20 sticks).	15.8	10.1					
			Coating	3.3	3.9					
			Fat consumed in frying	1.8						
			Handling loss		.6					
31	Purchased, frozen	3	Fried haddock sticks (two 8-oz. packages, 20 sticks).	16.1	14.2	13.6 to 15.0	88	54	2.4	6.0
			Haddock		7.6					
			Coating		6.0					
			Handling loss		.6					
	Salmon:									
32	Home-prepared	3	Salmon	16.1	13.8	13.2 to 14.4	72	100	1.9	6.2
			Salmon		11.7					
			Skin		1.1					
			Bones		.6					
			Handling loss		.4					
33	Purchased, canned	3	Alaska red—Sockeye salmon (1-lb. can).	16.1			71	100	1.9	6.0
			Salmon	11.4	11.4	11.0 to 11.8				
			Liquid	2.8						
			Skin	.9						
			Bones	.4						
			Handling loss	.6						
	Tuna pie:									
34	Home-prepared	3	Tuna, peas, sauce, pastry (eight 5-in. pies).	66.2	62.3	59.6 to 65.9	94	18	7.8	8.0
			Filling, cooked	40.8						
			Tuna, drained	11.5						
			Peas, cooked	8.8						
			Sauce, cooked	20.5						
			Pastry	25.4						
35	Purchased, frozen	3	Tuna, peas, sauce, pastry (8-oz., 5-in. pie).	8.3	7.8	7.2 to 8.4	93	18	7.8	1.0
			Tuna		1.4					
			Peas		.4					
			Sauce (by difference)		3.1					
			Pastry		2.9					

	Crabcakes:									
36	Home-prepared	3	Crabcakes	23.1	17.4	17.2 to 17.8	75	77	2.8	6.2
			Crabmeat	15.1	13.5					
			Onion	.5						
			Margarine, melted	.6						
			Egg, beaten	1.8						
			Seasonings	.1						
			Coating (by difference)	1.6	3.9					
			Fat consumed in frying	3.4						
37	Purchased, frozen	3	Fried crabcakes (three 6-oz. packages).	17.7	16.8	16.8 to 16.9	95	46	2.8	6.0
			Crabmeat		7.7					
			Parsley		.3					
			Coating (by difference)		8.8					
	Crabmeat:									
	Purchased:									
38	Cooked, chilled	9	Crabmeat (16-oz. container)	16.0			95	100	1.8	8.3
			Crabmeat	15.2	15.2	14.6 to 15.5				
			Cartilage	.8						
39	Canned	3	Crabmeat (two 6½-oz. cans)	13.0			85	100	1.8	6.0
			Crabmeat	11.0	11.0	10.8 to 11.6				
			Brine	1.9						
			Cartilage	.1						
	Crab, deviled:									
40	Home-prepared	3	Deviled crab	29.3	26.3	25.8 to 27.2	90	52	3.1	8.5
			Crabmeat	15.5	13.7					
			Onion	.8	12.6					
			Sauce	8.1						
			Seasonings	1.4						
			Egg	2.0						
			Buttered crumbs	1.5						
41	Purchased, frozen	3	Deviled crab (three 6-oz. packages).	19.6	18.7	17.8 to 19.5	95	22	3.1	6.0
			Crabmeat		4.2					
			Sauce (by difference)		7.1					
			Breading		7.4					
	Shrimp:									
	Home-prepared:									
42	From raw shrimp in shell.	3	Shrimp in shell (1 lb.)	15.6	13.4	13.1 to 13.8	60	100	2.1	4.4
			Shrimp		9.4	9.2 to 9.6				
			Shells and veins		4.0					
	Purchased:									
43	Canned	3	Shrimp, wet pack (two 4½-oz. cans, drained weight).	14.4			60	100	2.1	4.0
			Shrimp	8.6	8.6	8.5 to 8.6				
			Brine	5.4						
			Veins	.4						
44	Chilled, cooked, peeled, deveined.	3	Shrimp (1 lb.)	15.6			95	100	2.1	6.9
			Shrimp	14.8	14.8	13.9 to 15.8				
			Veins	.8						
45	Frozen, raw, peeled, deveined.	3	Shrimp (two 7-oz. packages)	14.0	8.7	8.4 to 9.0	62	100	2.1	4.1

See footnotes at end of table.

TABLE 3.—FISH AND SHELLFISH PRODUCTS: [1] *Components, yield of ready-to-eat food, and number of servings*—Continued

Identification number [2]	Name and form of food [3]	Number of samples	Description of initial item, weight on label, and components	Ready to cook or reheat	Ready to eat [4]					
					Mean weight	Range in weight	Yield of edible food [5]	Fish content [6]	Weight of one serving	Servings per purchase unit or cooking lot
	Shrimp, breaded, fried:									
	Home-prepared:			*Ounces*	*Ounces*	*Ounces*	*Percent*	*Percent*	*Ounces*	*Number*
46	From raw shrimp in shell.	3	Breaded shrimp, fried	24. 1	13. 4	11.8 to 14.4	47	55	2. 6	5. 2
			Shrimp	14. 9	7. 4					
			Coating	7. 6	3. 8					
			Fat consumed in frying	1. 6						
			Tails		2. 0					
			Handling loss		. 2					
47	From raw, peeled, deveined, frozen shrimp.	3	Breaded shrimp, fried	22. 8	13. 2	12.4 to 13.9	58	54	2. 6	5. 2
			Shrimp (two 7-oz. packages)	13. 2	7. 2					
			Coating	8. 0	5. 8					
			Fat consumed in frying	1. 6						
			Handling loss		. 2					
	Purchased:									
48	Frozen, raw, breaded	3	Shrimp, fried	17. 5	13. 8	13.5 to 14.1	67	30	2. 6	5. 4
			Breaded shrimp (1-lb. package).	16. 0						
			Shrimp		4. 1					
			Coating		7. 4					
			Fat consumed in frying	1. 5						
			Tails		2. 1					
			Handling loss		. 2					

49	Frozen, prefried	4	Fried breaded shrimp (two 6-oz. packages).	12.0	10.2	9.9 to 10.8	73	38	2.6	4.0
			Shrimp		3.9					
			Coating		4.7					
			Tails		1.5					
			Handling loss		.1					
	Shrimp creole:									
50	Home-prepared	3	Shrimp in sauce with rice	59.2	49.3	46.8 to 50.6	83	26	7.5	6.6
			Raw shrimp in shell	23.0	12.8					
			Onion	1.5	.8					
			Green pepper	1.5	1.2					
			Garlic	.1						
			Seasonings	.3						
			Tomato sauce (by difference).	20.7	16.9					
			Rice, cooked	12.1	17.6					
51	Purchased, frozen	3	Shrimp in sauce with rice (8-oz. package).	8.2	7.5	7.0 to 7.9	91	16	7.5	1.0
			Shrimp		1.2					
			Onions		.4					
			Sweet peppers		.4					
			Celery		.3					
			Bean sprouts		.3					
			Tomatoes (by difference)		3.4					
			Rice		1.5					

[1] Data from Bureau of Commercial Fisheries.
[2] Sample numbers correspond to those in tables 1 and 9.
[3] Home-prepared refers to foods prepared in the laboratory by formulas and procedures typical of those recommended for home use.
[4] Calculated on original data before rounding to 1 decimal place.
[5] Based on weight of initial item. Sauce, coating, and handling loss included; brine, bones, cartilage, skin, shells, veins, and tails excluded.
[6] Weight of cooked fish divided by weight of edible part of ready-to-eat food and expressed as percentage.

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TABLE 4.—PORK PRODUCTS: *Components, yield of ready-to-eat food, and number of servings*

Identification number [1]	Name and form of food [2]	Number of samples	Description of initial item, weight on label, and components	Ready to cook or reheat	Ready to eat [3]					
					Mean weight	Range in weight	Yield of edible food [4]	Lean meat content [5]	Weight of one serving [6]	Servings per purchase unit or cooking lot
	Ham, cured:									
	Home-prepared:			*Ounces*	*Ounces*	*Ounces*	*Percent*	*Percent*	*Ounces*	*Number*
52	Cook-before-eating	4	Shank half, bone in (7 lb.)	113.6	[7] 96.7	89.9 to 107.1 [7]	52	100	2.0	27.3
			Lean meat		54.7	48.8 to 62.6				
			Bone		10.7	8.9 to 11.8				
			Fat		24.9	22.1 to 29.3				
			Skin		2.4	2.1 to 3.0				
			Handling loss		4.0					
			Drippings		7.5	5.2 to 9.5				
	Purchased:									
53	Fully cooked, chilled	4	Shank half, bone in (7 lb.)	113.4	[7] 99.2	90.2 to 106.9 [7]	52	100	2.0	27.9
			Lean meat		55.8	49.0 to 62.4				
			Bone		9.9	8.8 to 11.2				
			Fat		27.7	24.8 to 30.2				
			Skin		2.8	2.1 to 4.0				
			Handling loss		3.0					
			Drippings		7.3	4.5 to 9.0				

55	Canned	4	Whole, boneless, with broth (12-lb. can).	196.3						
			Ham	171.7	[7] 142.1	136.3 to 146.0 [7]	65	100	2.0	61.0
			Lean meat		121.9	121.3 to 123.2				
			Fat		14.4	11.5 to 17.4				
			Handling loss		5.8					
			Drippings		9.3	7.0 to 12.0				
			Broth and gelatin [8]	24.6						
	Sausage, pork:									
	Home-prepared:									
57	Bulk [9]		Sausage patties	8.8	[7] 4.1		47	100	2.0	2.1
58	Link [9]		Sausage links	9.2	[7] 4.1		45	100	2.0	2.1
	Purchased:									
59	Canned	14	Sausage links in broth (8-oz. can).	7.5						
			Links	5.4	[7] 4.1	3.8 to 4.6 [7]	55	100	2.0	2.1
			Drippings		.3					
			Broth (by difference) [8]	2.1						
60	Frozen	14	Sausage, precooked links [10] (8-oz. package).	7.9	[7] 6.4	6.0 to 7.3 [7]	81	100	2.0	3.2
			Drippings		.7					

[1] Sample numbers correspond to those in tables 1 and 10.
[2] Home-prepared refers to foods prepared in the laboratory by formulas and procedures typical of those recommended for home use.
[3] Calculated on original data before rounding to 1 decimal place.
[4] Based on weight of initial item. Bone, fat, skin, drippings, broth, and gelatin are excluded; handling loss included.
[5] Weight of cooked lean meat divided by weight of edible part of ready-to-eat food and expressed as percentage.
[6] Based on lean meat.
[7] Does not include drippings.
[8] Not heated with ham or sausage.
[9] Calculated from Agr. Handb. 102, "Food Yields Summarized by Different Stages of Preparation" (*20*) and from laboratory data.
[10] Contained some beef.

TABLE 5.—POULTRY PRODUCTS: *Components, yield of ready-to-eat food, and number of servings*

Identification number [1]	Name and form of food [2]	Number of samples	Description of initial item, weight on label, and components	Ready to cook or reheat	Ready to eat [3]					
					Mean weight	Range in weight	Yield of edible food [4]	Lean meat content [5]	Weight of one serving	Servings per purchase unit or cooking lot
	Chicken, whole:			*Ounces*	*Ounces*	*Ounces*	*Percent*	*Percent*	*Ounces*	*Number*
61	Home-prepared, braised.[6]	----	Chicken, whole	40. 0	27. 2	----	47	75	[7] 2. 0	7. 0
62	Purchased, canned	4	Chicken in broth without giblets (52-oz. can).[8]	53. 9	53. 9	53.8 to 54.0	37	74	[7] 2. 0	7. 0
			Lean meat	----	14. 1	----	----	----	----	----
			Light meat	----	7. 5	7.4 to 7.7	----	----	----	----
			Dark meat	----	6. 6	5.8 to 7.1	----	----	----	----
			Bone	----	6. 2	5.5 to 6.6	----	----	----	----
			Skin	----	5. 0	4.4 to 5.4	----	----	----	----
			Broth	----	27. 6	26.0 to 28.1	----	----	----	----
			Handling loss	----	1. 0	----	----	----	----	----
	Chicken, meat:									
63	Home-prepared [6]	----	Chicken pieces (bone in)	6. 3	4. 3	----	47	86	[9] 1. 5	2. 0
64	Purchased, canned	4	Chicken meat in broth (5-oz. can).[8]	4. 8	4. 8	4.7 to 5.0	64	86	[9] 1. 5	2. 0
			Meat	----	2. 6	2.4 to 2.7	----	----	----	----
			Skin	----	. 4	0.4 to 0.5	----	----	----	----
			Broth	----	1. 7	1.5 to 2.0	----	----	----	----
			Handling loss	----	. 1	----	----	----	----	----
	Chicken chow mein:									
65	Home-prepared	6	Chow mein with noodles	29. 7	25. 5	----	86	31	[10] 6. 6	3. 9
			Chow mein	25. 2	21. 0	20.1 to 22.3	----	----	----	----
			Chicken, cooked, diced	7. 9	----	----	----	----	----	----
			Onion	1. 4	----	----	----	----	----	----
			Celery	2. 4	----	----	----	----	----	----
			Mushrooms, canned, sliced.	1. 6	----	----	----	----	----	----
			Bean sprouts, canned	4. 4	----	----	----	----	----	----
			Sauce ingredients	7. 5	----	----	----	----	----	----
			Noodles (calculated)	4. 5	4. 5	----	----	----	----	----
	Purchased:									
66	Canned	4	Chow mein with noodles	19. 1	18. 9	----	99	3	[10] 6. 6	2. 9
			Chow mein (16-oz. can)	15. 8	15. 6	15.4 to 15.9	----	----	----	----
			Chicken	----	. 6	0.2 to 0.8	----	----	----	----
			Onion, bean sprouts, etc	----	5. 1	4.7 to 5.6	----	----	----	----
			Celery	----	3. 0	2.4 to 3.3	----	----	----	----
			Sweet red pepper	----	. 1	<0.1 to 0.1	----	----	----	----
			Sauce (by difference)	----	6. 8	----	----	----	----	----
			Noodles (calculated)[11]	3. 3	3. 3	----	----	----	----	----

67	Frozen	4	Chow mein with noodles	24.2	23.9		99	3	6.6	3.6
			Chow mein (20-oz. package).	20.0	19.7	19.1 to 20.1				
			Chicken		.8	0.5 to 1.1				
			Vegetables		18.9					
			Sauce							
			Noodles (calculated)[11]	4.2	4.2					
69	Packaged combination.	3	Chow mein, soy sauce, noodles (1 package).	19.9	19.7		99	5	[10] 6.6	3.0
			Chow mein (16-oz. can)	16.0	15.8	15.7 to 15.9				
			Chicken		.9	0.7 to 1.2				
			Bean sprouts		1.9	1.5 to 2.2				
			Celery and onion		3.0	2.4 to 3.4				
			Sweet red pepper		.1	<0.1 to 0.1				
			Mushrooms		.2	0.1 to 0.3				
			Bamboo shoots and water chestnuts.		.4	0.2 to 0.8				
			Sauce and inseparable material (by difference).		9.3					
			Soy sauce	.4	.4	0.4 to 0.5				
			Noodles	3.5	3.5	3.3 to 3.6				
	Chicken dinner:									
70	Home-prepared [6]		Chicken and vegetables	12.5	11.1		78	22	11.1	1.0
71	Purchased, frozen	6	Chicken and vegetables (11-oz. dinner).	11.2	11.1	9.9 to 12.5	88	22	11.1	1.0
			Chicken, bone in, fried		5.3	4.8 to 6.5				
			Breast		1.8	1.6 to 2.7				
			Leg		2.0	1.3 to 2.6				
			Wing		1.5	1.1 to 2.6				
			Lean meat		2.5					
			Light		1.5	1.2 to 2.1				
			Dark		1.0	0.6 to 1.4				
			Skin, fat, coating		1.5	1.2 to 1.9				
			Bone		1.3	1.0 to 1.6				
			Potatoes, mashed		3.7					
			Mixed vegetables		2.1	1.6 to 2.3				
			Green beans		.3	0.2 to 0.5				
			Carrots		.5	0.2 to 0.6				
			Corn		.4	0.3 to 0.6				
			Lima beans		.3	0.2 to 0.5				
			Peas		.6	0.5 to 0.7				
	Chicken, fricassee:									
72	Home-prepared	6	Chicken and gravy	47.5	26.1		55	42	4.1	6.3
			Chicken meat	31.6	10.9					
			Gravy	15.9	15.2					
73	Purchased, canned	6	Chicken and gravy (14-oz. can)	14.1	13.8	13.2 to 14.3	98	16	4.1	3.3
			Chicken meat, boneless		2.3	2.1 to 2.4				
			Gravy (by difference)		11.5					

See footnotes at end of table.

TABLE 5.- POULTRY PRODUCTS: *Components, yield of ready-to-eat food, and number of servings*—Continued

Identification number [1]	Name and form of food [2]	Number of samples	Description of initial item, weight on label, and components	Ready to cook or reheat	Ready to eat [3]					
					Mean weight	Range in weight	Yield of edible food [4]	Lean meat content [5]	Weight of one serving	Servings per purchase unit or cooking lot
	Chicken, fried:									
	Home-prepared:									
	Flour-coated:			*Ounces*	*Ounces*	*Ounces*	*Percent*	*Percent*	*Ounces*	*Number*
74	From chilled chicken.	8	Chicken pieces (1 chicken, 11 pieces).	45.6	35.3	33.2 to 37.7	58	57	[7] 2.0	7.6
			Chicken	41.8						
			Flour coating	2.1						
			Fat consumed in frying	1.7						
			Lean meat		15.1					
			Light		7.7	7.0 to 8.4				
			Dark		7.4	6.6 to 8.5				
			Giblets		1.4	1.0 to 1.8				
			Bone		8.9	7.9 to 10.9				
			Skin, fat, coating		7.9	7.4 to 8.4				
			Handling loss		2.0					
	Batter-dipped:									
75	From chilled chicken.	4	Chicken pieces (1 chicken, 9 pieces).	45.6	32.4	29.3 to 33.9	55	59	[7] 2.0	7.4
			Chicken	38.7						
			Batter coating	4.6						
			Fat consumed in frying	2.3						
			Lean meat		14.9					
			Light		7.4	6.6 to 8.5				
			Dark		7.5	6.4 to 8.6				
			Bone		7.4	6.5 to 9.0				
			Skin, fat, coating		8.9	8.3 to 9.3				
			Handling loss		1.2					
76	From frozen chicken.	12	Chicken pieces (1 package, 9 pieces).	28.9	23.4	20.8 to 25.1	63	55	[7] 2.0	5.0
			Chicken	25.3						
			Batter coating	2.9						
			Fat consumed in frying	.7						
			Lean meat		10.1					
			Light		5.8	2.8 to 8.1				
			Dark		4.3	2.8 to 6.0				
			Bone		5.1	3.8 to 6.0				
			Skin, fat, coating		6.6	5.5 to 7.5				
			Handling loss		1.6					

	Purchased, frozen, prefried:								
77	Batter-dipped	11	Fried chicken pieces (1 package, 9 pieces).	20.6	19.9	18.7 to 21.5	74	55	[7] 2.0	4.2
			Lean meat		8.4					
			Light		4.8	3.8 to 5.7				
			Dark		3.6	2.0 to 5.8				
			Bone		4.6	4.1 to 5.2				
			Skin, fat, coating		6.1	4.9 to 7.0				
			Handling loss		.8					
	Chicken pie:									
78	Home-prepared	7	Chicken, vegetables, gravy, pastry (9-in. pie).	27.4	23.7	18.9 to 35.3	87	19	7.7	3.1
			Filling, cooked	21.3						
			Filling ingredients	23.8						
			Chicken, cooked	4.6						
			Carrots	2.6						
			Peas, frozen	2.7						
			Onion	.1						
			Gravy, ingredients	13.8						
			Pastry	6.1						
	Purchased:									
79	Chilled	3	Chicken, vegetables, gravy, pastry (12-oz., 6-in. pie).	13.9	13.7	13.2 to 14.5	99	15	7.7	1.8
			Chicken		2.1					
			Light meat		1.4					
			Dark meat		.7					
			Carrots		.7					
			Peas		1.0					
			Potato		1.5					
			Gravy and inseparable material.		5.3					
			Pastry		3.1					
80	Frozen	8	Chicken, vegetables, gravy, pastry (8-oz., 5-in. pie).	7.9	7.8	7.2 to 8.4	98	12	7.7	1.0
			Chicken		.9	0.5 to 1.2				
			Carrots		.3	0.1 to 0.4				
			Peas		.3	0.2 to 0.6				
			Gravy (by difference)		4.1					
			Pastry		2.2	2.0 to 2.6				
	Turkey dinner:									
81	Home-prepared [6]		Turkey, dressing, gravy, vegetables.	14.7	12.5		85	19	12.5	1.0
82	Purchased, frozen	9	Turkey, dressing, gravy, vegetables (12-oz. dinner).	12.8	12.5	11.4 to 13.5	98	19	12.5	1.0
			Turkey, roasted, sliced		2.3	2.1 to 2.9				
			Dressing		3.2	2.5 to 3.7				
			Gravy (by difference)		2.8					
			Potatoes, boiled		2.5	1.5 to 3.1				
			Peas		1.7	1.4 to 2.2				

See footnotes at end of table.

TABLE 5.—POULTRY PRODUCTS: *Components, yield of ready-to-eat food, and number of servings*—Continued

Identification number [1]	Name and form of food [2]	Number of samples	Description of initial item, weight on label, and components	Ready to cook or reheat	Ready to eat [3]					
					Mean weight	Range in weight	Yield of edible food [4]	Lean meat content [5]	Weight of one serving	Servings per purchase unit or cooking lot
	Turkey main course:			*Ounces*	*Ounces*	*Ounces*	*Percent*	*Percent*	*Ounces*	*Number*
83	Home-prepared [6]		Turkey, dressing, gravy, potatoes.	12.3	10.4		85	21	10.4	1.0
84	Purchased, frozen	3	Turkey, dressing, gravy, potatoes (9.5-oz. main course).	10.4	10.4	10.2 to 10.9	100	21	10.4	1.0
			Turkey, roasted, sliced		2.2					
			Light meat		1.1	0.9 to 1.2				
			Dark meat		1.1	0.6 to 1.5				
			Dressing		3.0	2.7 to 3.4				
			Gravy (by difference)		1.9					
			Potatoes, mashed		3.3	3.3 to 3.6				
	Turkey sandwich:									
85	Home-prepared [6]		Turkey, buttered buns	5.3	5.3		100	43	3.2	1.7
86	Purchased, frozen	18	Turkey, buttered buns (6.5-oz. package, 2 sandwiches).	6.4	6.4	5.7 to 6.8	99	36	3.2	2.0
			Turkey, sliced		2.3	2.2 to 2.4				
			Buttered bun (by difference).		4.1					
	Turkey slices in gravy:									
87	Home-prepared [6]		Turkey, gravy	7.9	5.0		62	44	5.0	1.0
88	Purchased, frozen	3	Turkey slices in gravy (5-oz. bag).	5.0	5.0	4.8 to 5.2	99	44	5.0	1.0
			Turkey		2.2	1.9 to 2.4				
			Gravy (by difference)		2.8					

[1] Sample numbers correspond to those in tables 1 and 11.

[2] Home-prepared refers to foods prepared in the laboratory by formulas and procedures typical of those recommended for home use.

[3] Calculated on original data before rounding to 1 decimal place.

[4] Based on weight of initial item. Gravy, chicken skin, and handling loss included; bone and broth excluded.

[5] Weight of cooked lean meat divided by weight of edible part of ready-to-eat food and expressed as percentage.

[6] Calculated from Agr. Handb. 102, "Food Yields Summarized by Different Stages of Preparation" (*20*) and laboratory data. Components calculated on basis of purchased form.

[7] Based on 2 oz. of lean meat.

[8] Warmed slightly to remove from can; not heated for serving.

[9] Based on 1½ oz. of lean meat with skin.

[10] One serving calculated using 5.45 oz. of chow mein and 1.16 oz. of noodles.

[11] Not included in purchased item.

TABLE 6.—CHEESE PRODUCTS: *Components, yield of ready-to-eat food, and number of servings*

Identification number [1]	Name and form of food [2]	Number of samples	Description of initial item, weight on label, and components	Ready to cook or reheat	Ready to eat [3]				
					Mean weight	Range in weight	Yield of edible food [4]	Weight of one serving	Servings per purchase unit or cooking lot
	Pizza:			*Ounces*	*Ounces*	*Ounces*	*Percent*	*Ounces*	*Number*
89	Home-prepared	6	Pizza (14-in. pizza)	24.3	21.2	20.1 to 21.9	87	8.3	2.6
			Dough	11.5					
			Olive oil	.2					
			Sauce	9.2					
			Cheese, Parmesan	3.4					
	Purchased:								
90	Chilled	8	Pizza (10-oz., 9-in. pizza)	9.9	8.3	7.6 to 9.1	84	8.3	1.0
			Dough		5.1	4.8 to 5.6			
			Sauce and cheese (by difference)		3.2				
91	Frozen	7	Pizza (15-oz., 12-in. pizza)	17.4	16.8	16.3 to 17.6	97	8.3	2.0
			Dough	16.5	11.3	10.4 to 12.0			
			Sauce and cheese (by difference)		5.5				
			Olive oil [5]	.9					
92	Packaged combination	3	Pizza (15.5-oz., 14-in. pizza)	19.8	15.9	15.7 to 16.1	80	8.3	1.9
			Dough	10.0					
			Yeast	.2					
			Water	3.7					
			Flour mix	6.0					
			Shortening [5]	.2					
			Sauce	8.0					
			Cheese	1.6					

See footnotes at end of table.

TABLE 6.—CHEESE PRODUCTS: *Components, yield of ready-to-eat food, and number of servings*—Continued

Identification number [1]	Name and form of food [2]	Number of samples	Description of initial item, weight on label, and components	Ready to cook or reheat	Ready to eat [3]				
					Mean weight	Range in weight	Yield of edible food [4]	Weight of one serving	Servings per purchase unit or cooking lot
	Spaghetti with cheese in tomato sauce:			*Ounces*	*Ounces*	*Ounces*	*Percent*	*Ounces*	*Number*
93	Home-prepared	7	Spaghetti, sauce, and cheese	66.0	56.9	54.2 to 61.2	86	8.9	6.4
			Sauce	41.6	32.5				
			Tomatoes, canned	20.8					
			Tomato paste	4.0					
			Water	11.7					
			Olive oil	1.8					
			Onion	2.8					
			Seasonings	.7					
			Spaghetti	7.9	22.8				
			Water absorbed in cooking	14.9					
			Cheese, Parmesan	1.5	1.5				
	Purchased:								
94	Canned	11	Spaghetti, sauce, and cheese (15.2-oz. can).	15.2	14.8	14.4 to 15.2	98	8.9	1.7
95	Packaged combination	10	Spaghetti, sauce, and cheese (1 package).	38.8	37.2	36.1 to 39.1	96	8.9	4.2
			Sauce	19.1	17.7				
			Sauce mix	.9					
			Tomato paste, canned [5]	6.0					
			Water	11.8					
			Margarine [5]	.4					
			Spaghetti	7.0	18.5				
			Salt	.2					
			Water absorbed in cooking	11.5					
			Margarine [5]	.4	.4				
			Cheese, Parmesan	.6	.6				

[1] Sample numbers correspond to those in tables 1 and 12.
[2] Home-prepared refers to foods prepared in the laboratory by formulas and procedures typical of those recommended for home use.
[3] Calculated on original data before rounding to 1 decimal place.
[4] Based on weight of initial item.
[5] Not included in this form of the food as purchased.

TABLE 7.—VARIATION AMONG BRANDS: *Components and yields of five ready-to-eat products*

Name of food and description of initial item and components	Number of samples	Ready to cook or reheat	Ready to eat [1]				
			Mean weight	Range in weight	Yield of edible food [2]	Lean meat in one serving	
		Ounces	*Ounces*	*Ounces*	*Percent*	*Percent* [3]	*Ounces*
Beef pie:							
Brand A [4]	9						
Beef, vegetables, gravy, pastry (8-oz., 5-in. pie)		8.0	7.6	7.4 to 8.0	95	16	1.2
Beef			1.2	1.0 to 1.5			
Carrots			.3	0.2 to 0.4			
Onions			.1	<0.1 to 0.2			
Potatoes							
Peas			.2	0.1 to 0.5			
Gravy (by difference)			3.6				
Pastry			2.2	2.0 to 2.4			
Brand B	3						
Beef, vegetables, gravy, pastry (8-oz., 5-in. pie)		8.2	7.9	7.7 to 8.0	97	15	1.2
Beef			1.2	1.2 to 1.3			
Carrots			.2	0.1 to 0.4			
Potatoes			.2	0.1 to 0.2			
Peas			.2	0.1 to 0.2			
Gravy (by difference)			3.1				
Pastry			3.0	2.9 to 3.2			
Brand C	3						
Beef, vegetables, gravy, pastry (8-oz., 5-in. pie)		8.1	7.5	7.2 to 7.8	93	17	1.3
Beef			1.3	1.1 to 1.4			
Carrots			.2	0.2 to 0.3			
Potatoes			.1	<0.1 to 0.1			
Peas			.2	0.2 to 0.3			
Pimiento			(5)				
Gravy (by difference)			2.7				
Pastry			3.0	2.8 to 3.0			
Brand D	3						
Beef, vegetables, gravy, pastry (8-oz., 5-in. pie)		8.1	7.4	7.2 to 7.6	91	20	1.5
Beef			1.5	1.4 to 1.6			
Carrots			.3	0.2 to 0.4			
Potatoes			.1	<0.1 to 0.1			
Peas			.2	0.2 to 0.3			
Gravy (by difference)			3.4				
Pastry			1.9	1.8 to 2.0			
Chicken pie:							
Brand A [4]	8						
Chicken, vegetables, gravy, pastry (8-oz., 5-in. pie)		7.9	7.8	7.2 to 8.4	98	12	.9
Chicken			.9	0.5 to 1.2			
Carrots			.3	0.1 to 0.4			
Peas			.3	0.2 to 0.6			
Gravy (by difference)			4.1				
Pastry			2.2	2.0 to 2.6			

See footnotes at end of table.

TABLE 7.—VARIATION AMONG BRANDS: *Components and yields of five ready-to-eat products*—Continued

Name of food and description of initial item and components	Number of samples	Ready to cook or reheat	Ready to eat [1]				
			Mean weight	Range in weight	Yield of edible food [2]	Lean meat in one serving	
Chicken pie—Continued		*Ounces*	*Ounces*	*Ounces*	*Percent*	*Percent* [3]	*Ounces*
Brand B	3						
Chicken, vegetables, gravy, pastry (8-oz., 5-in. pie)		8.1	7.3	6.9 to 7.8	90	17	1.3
Chicken			1.3	1.1 to 1.5			
Carrots			.2	0.1 to 0.4			
Peas			.3	0.1 to 0.4			
Sweet red pepper			(5)				
Gravy (by difference)			3.6				
Pastry			1.9	1.8 to 2.0			
Brand C	3						
Chicken, vegetables, gravy, pastry (8-oz., 5-in. pie)		8.1	7.9	7.8 to 7.9	97	12	.9
Chicken			.9	<0.9 to 0.9			
Peas			.3	0.2 to 0.3			
Sweet red pepper			(5)				
Gravy (by difference)			3.6				
Pastry			3.1	2.8 to 3.3			
Chicken dinner:							
Brand A [4]	6						
Chicken and vegetables (11-oz. dinner)		11.2	11.1	9.9 to 12.5	88	22	2.5
Chicken, bone in, fried			5.3	4.8 to 6.5			
Breast			1.8	1.6 to 2.7			
Leg			2.0	1.3 to 2.6			
Wing			1.5	1.1 to 2.6			
Lean meat			2.5				
Light			1.5	1.2 to 2.1			
Dark			1.0	0.6 to 1.4			
Skin, fat, coating			1.5	1.2 to 1.9			
Bones			1.3	1.0 to 1.6			
Potatoes, mashed			3.7				
Mixed vegetables			2.0	1.6 to 2.3			
Green beans			.3	0.2 to 0.5			
Carrots			.4	0.2 to 0.6			
Corn			.4	0.3 to 0.6			
Lima beans			.3	0.2 to 0.5			
Peas			.6	0.5 to 0.7			
Brand B	3						
Chicken and vegetables (11-oz. dinner)		11.5	11.0	9.9 to 12.1	87	20	2.2
Chicken, bone in, fried (wing, thigh, breast, back)			5.7	4.7 to 6.4			
Lean meat			2.2				
Light			1.1	0.6 to 1.5			
Dark			1.1	0.8 to 1.3			
Skin, fat, coating			2.5	2.0 to 3.0			
Bones			1.0	0.7 to 1.2			
Potatoes, mashed			3.6				
Peas			1.7	1.6 to 1.9			

Brand C	3						
Chicken and vegetables (11-oz. dinner)		13.0	12.7	12.0 to 13.1	89	20	2.6
Chicken, bone in, fried			6.0	5.8 to 6.2			
Breast			1.7	1.4 to 2.0			
Thigh			2.4	2.3 to 2.4			
Wing			1.9	1.8 to 2.0			
Lean meat			2.6				
Light			1.4	1.3 to 1.5			
Dark			1.2	1.1 to 1.3			
Skin, fat, coating			2.3	2.2 to 2.3			
Bones			1.1	1.0 to 1.4			
Potatoes, mashed			4.0				
Corn			2.6	2.0 to 2.9			
Sweet red pepper			.1	<0.1 to 0.1			
Turkey dinner:							
Brand A [4]	9						
Turkey, dressing, gravy, vegetables (12-oz. dinner)		12.8	12.5	11.4 to 13.5	98	19	2.3
Turkey, sliced			2.3	2.1 to 2.9			
Dressing			3.2	2.5 to 3.7			
Potatoes, boiled			2.5	1.5 to 3.1			
Peas			1.7	1.4 to 2.2			
Gravy (by difference)			2.8				
Brand B	3						
Turkey, dressing, gravy, vegetables (11-oz. dinner)		11.7	11.5	11.1 to 11.8	98	26	3.0
Turkey, sliced			3.0	2.7 to 3.3			
Light meat			1.8	1.5 to 2.0			
Dark meat			1.2	1.1 to 1.3			
Dressing			3.1	2.8 to 3.2			
Potatoes, mashed			2.5	2.2 to 2.9			
Peas			1.8	1.7 to 1.9			
Gravy (by difference)			1.1				
Chicken, whole:							
Canned:							
Brand A [4]	4						
Chicken in broth without giblets (52-oz. can)		53.9	53.9	53.8 to 54.0	37	74	2.0
Lean meat			14.1				
Light			7.5	7.4 to 7.7			
Dark			6.6	5.8 to 7.1			
Bone			6.2	5.5 to 6.6			
Skin			5.0	4.4 to 5.4			
Broth			27.6	26.0 to 28.1			
Handling loss			1.0				
Brand B	36						
Chicken in broth without giblets (52-oz. can)		51.4	51.4	49.9 to 52.5	34	75	2.0
Lean meat			12.3				
Light			6.2	4.7 to 7.2			
Dark			6.1	4.2 to 7.3			
Bone			5.7	4.4 to 7.0			
Skin			4.2	2.9 to 5.8			
Broth			28.1	25.5 to 30.9			
Handling loss			1.1				

[1] Calculated on original data before rounding to 1 decimal place.
[2] Based on weight of initial item. Includes lean meat and skin of poultry; gravy; handling loss. Excludes broth and bone.
[3] Weight of cooked lean meat divided by weight of edible part of ready-to-eat food and expressed as percentage.
[4] This brand used for proximate composition analyses.
[5] Less than 0.05 oz.

Comparisons of Lean Meat per Serving

Size of serving for most of the plain meat items was set at 2 ounces of lean meat, for comparative purposes. The size of serving used for plain fish or shellfish was also around 2 ounces. The amount of identifiable lean meat, fish, or poultry in a serving of the other foods investigated varied greatly, as shown in figure 4.

Meat or fish in a serving of the various commercial forms of foods when ready-to-eat ranged from 0.2 ounce to an estimated 4.2 ounces. In the home-prepared foods, meat or fish in a serving varied from 1.4 to 3.1 ounces.

Several of the frozen dinners and main courses contained over 3.5 ounces of lean meat or fish. Meat in the various kinds of dinners and main courses ranged from 1.7 ounces in the codfish-stick dinner to an estimated 4.2 ounces in the meat-loaf main course. Data for the meat-loaf items were calculated on the basis of the formula used for the home-prepared meat loaf (appendix, p. 60) containing 75 percent by weight of meat and eggs. This estimate would appear to be reasonable on the basis of the protein content, which averaged 15 percent for home-prepared and 13.5 percent for frozen meat loaf. The home-prepared codfish-stick dinner contained 2.3 ounces of fish; the frozen dinner, 1.7 ounces. The home-prepared haddock dinner included 3.1 ounces of fish; the frozen dinner, 3.7 ounces.

Sandwiches contained 1.8 to 2 ounces of beef, or slightly over an ounce (1.1) of turkey.

The commercially prepared beef, chicken, and tuna pies contained from 0.9 to 1.4 ounces of meat or fish. Fowler [4] also found commercial chicken pies to contain slightly more than 1 ounce of chicken. Track (*26*) reported a slightly higher tuna content in tuna pie than that found in this study, but mentioned that some sauce clung to the fish—a factor that could cause considerable variation.

Although the serving size for the fried breaded fish and shellfish items was about 2.5 ounces, a serving of these foods when home-prepared and ready-to-eat contained from 1.4 to 1.7 ounces of fish as compared to 1.0 to 1.3 in the commercial products. Several of the breaded items had considerable amounts of coating, and the shrimp had tails attached.

The home-prepared forms of combination dishes prepared by typical household formulas generally contained more meat or fish than did the market forms. In a serving of the home-prepared foods, meat or fish ranged from 1.6 to 2.2 ounces; in the various market forms, from 0.2 to 2.2 ounces. Chicken chow mein had 2.0 ounces of chicken per serving in the home-prepared form, from 0.2 to 0.3 ounce in the various commercial forms. Chicken fricassee contained 1.7 ounces of lean chicken meat per serving when home-prepared, and 0.7 ounce when canned. A serving of home-prepared crab-cakes contained 2.2 ounces of crab; the commercially frozen form when ready-to-eat contained 1.3 ounces. Home-prepared deviled crab contained 1.6 ounces of crabmeat; the frozen product, 0.7 ounce. Shrimp in the home-prepared creole weighed 1.9 ounces, and in the frozen creole 1.2 ounces. Commercially frozen turkey slices in gravy had 2.2 ounces of turkey meat in a serving.

Palatability, Packaging, and Use Qualities

The majority of the purchased foods were attractive in appearance, conveniently packaged, and easy to prepare. Quality characteristics differed in the various forms of a food and in the different brands of purchased foods.

The home-prepared foods, which were made from unstored ingredients and evaluated immediately after cooking, were good in quality.

Plain Meats and Fish

Canned whole chicken had good eating quality generally. However, it was difficult to remove the chicken from the can without breaking it. The meat in one brand was slightly tough and stringy, whereas in the other the meat tended to be soft and to break up easily. The broth of one brand was too salty for use without dilution or combination with bland ingredients.

All forms of ham were moist and tender. Both canned and frozen sausage had good eating quality, although the frozen sausage was quite firm.

Dinners and Main Courses

The frozen dinners generally had good eating quality. Most of the foods comprising the dinners looked attractive; colorful vegetables enhanced palatability. Whole slices of meat and pieces of crisp fried chicken were used in the different dinners. In the haddock dinner, the fish fillet was tender with no bones; the sauce was excellent; the peas had a good color and texture. The codfish sticks in the dinner were slightly tough and heavily breaded.

Suggested improvements for the dinners are a turkey dressing that is less moist and soggy and a thicker gravy in the beef dinner. Track (*22*) evaluated beef dinners having similar ingredients and also mentioned the need for better consistency of gravy.

[4] Fowler, E. B. 1958. Relation of cut and size of broilers to the yield, cost, and use of edible cooked meat. M.S. thesis, University of Georgia, Athens, Ga.

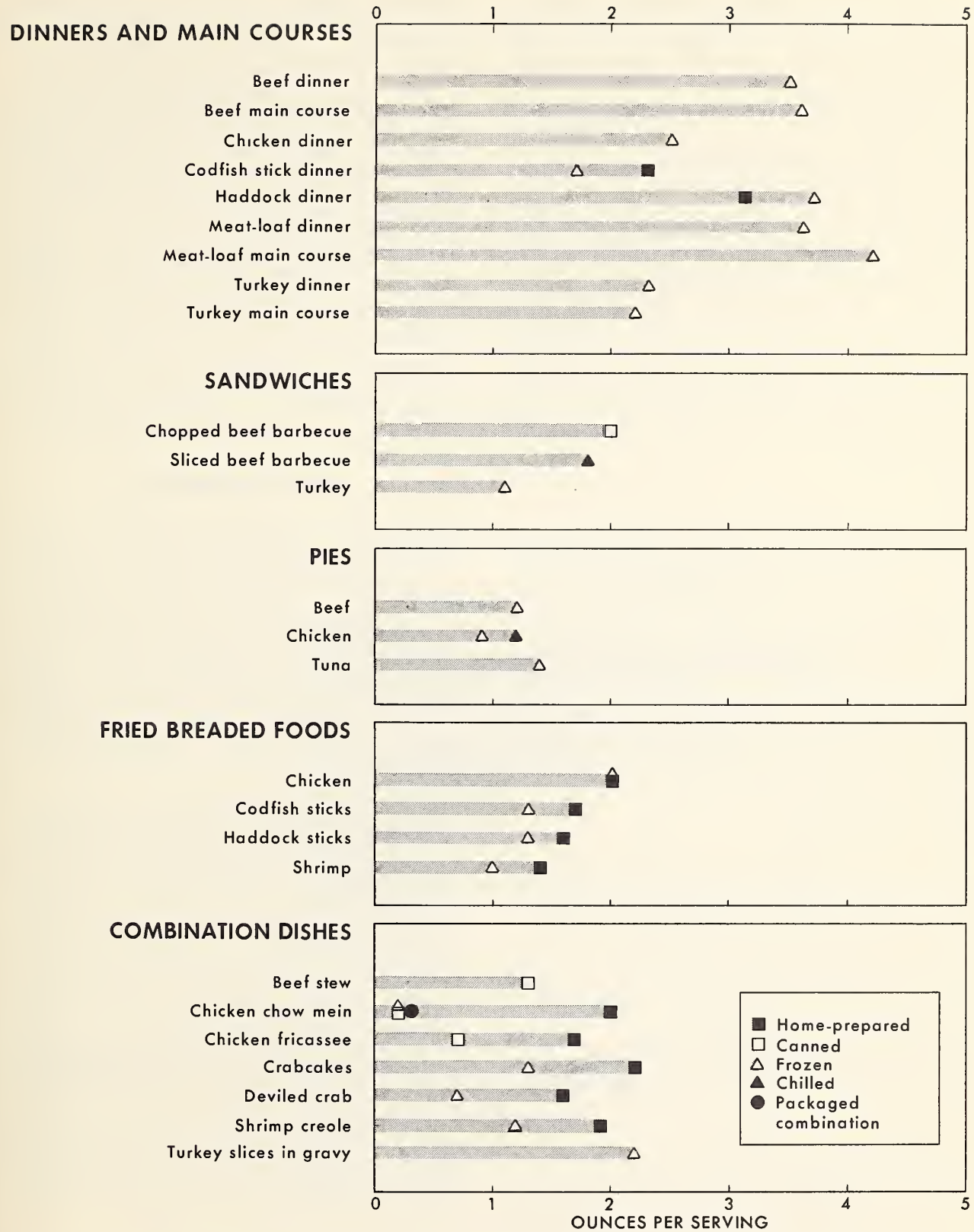

FIGURE 4.—Lean meat in a serving of dinners and main courses, sandwiches, pies, fried breaded foods, and combination dishes.

Frozen main courses were similar to the dinners but with one less vegetable. In some cases fragments of meat were used with a covering slice of meat; and in one case, the green vegetable had changed color to some extent and had a slight haylike odor and flavor.

Sandwiches

In the frozen beef sandwich, the filling partially soaked into the bun but did not seriously impair eating quality. The plastic bag in which chilled beef barbecue was packaged was very convenient for heating this product in water. The amount of turkey in the turkey sandwich was generous.

Frozen pizza and packaged combination pizza were good in eating quality. The packaged combination made an attractive, fresh, baked product. Some of the chilled pizzas had been stored improperly before purchase and had lost their fresh appearance; a few had mold on the bottom of the crust when opened for use soon after purchase.

Pies

All brands of beef pie and of chicken pie had good eating quality. Pieces of meat, although small in number, were generally of good size; gravy had a rich color, probably partly due to the caramel coloring added to the beef or the turmeric used with the chicken; and the crust was tender and flaky in most cases. One brand of pies tended to overbrown when baked according to the directions, and crusts of a few pies had ragged edges, but these defects were not considered serious. The tuna pie had a flaky crust, and the sauce was well seasoned and of good consistency. The peas in the tuna pie had good color and flavor.

Fried Breaded Foods

Freshly fried chicken made from both chilled and frozen chicken had good eating quality. Prefried frozen chicken generally was acceptable, but some samples had a rancid odor.

Fried shrimp prepared from raw shrimp in the shell or raw, peeled, frozen shrimp were very good products, as was the frozen, raw breaded form. The prefried frozen shrimp samples varied in quality characteristics; some had an unpleasant strong odor, probably due to improper storage conditions before purchase; others had no off-odor.

Combination Dishes

Vegetables in canned beef stew were soft and tended to lose their shape, and the stew had a caramel-like flavor.

All forms of chicken chow mein had good eating quality, although the amount of chicken in the commercial forms was small. The liquid in the canned product was more viscous than that in the other market forms. The color of the vegetables in the frozen form was especially bright and attractive.

Canned chicken fricassee included large chunks of chicken in a generous amount of sauce. This product was difficult to heat as it tended to stick to the pan and required much attention unless heated in a double boiler. The frozen turkey in gravy contained attractive slices of meat; the gravy was slightly thick, with some tendency for fat to separate, but the turkey slices were rated good in eating quality.

Frozen crabcakes were small and had a rather pasty texture. They lacked crab flavor. Frozen deviled crab had good palatability but more of a nutmeg than a crab flavor. Frozen shrimp creole contained tiny shrimp and was of good quality.

Spaghetti with cheese in tomato sauce was fresh-tasting and attractive when made from the packaged combination. Canned spaghetti tended to be too soft, but the sauce was satisfactory.

Relative Market Costs

To facilitate comparisons of the various forms of foods, the ingredient cost for the ready-to-eat, home-prepared food was given a base value of 1, and costs of an equivalent weight of the other forms when ready-to-eat were expressed as multiples of the base.

The relative cost[5] of the different market forms and the home-prepared items shown in figures 5 and 6 were from data obtained in four metropolitan areas in different parts of the country at monthly intervals for a year. Detailed cost comparisons of these foods have been published (*9*, *10*).

Most commercial products cost more than those prepared in the home. Frozen beef patties cost over two and a half times as much as the home-prepared food, and canned chicken meat and fried breaded chicken roughly two times as much as home-prepared. Canned sausage links were slightly more expensive and the frozen form slightly less expensive than the home-prepared sausage links. Uncooked bulk sausage (data not shown) cost about two-thirds as much as uncooked home-prepared sausage links. At prices current at the time of this investigation, canned ham cost about one-sixth more per serving than cook-before-eating ham and about one-tenth more than fully cooked (chilled) ham. The cost of fully cooked ham and of canned ham, if served without reheating, would be considerably lower than the cost shown in figure 5 since the yields would be greater.

[5] Cost data provided by the Marketing Economics Division, Economic Research Service.

Most of the frozen dinners cost two to two and a half times more than the ingredients for corresponding home-prepared items.

The higher cost of home-prepared chicken fricassee and chicken chow mein as compared to other forms is due mainly to larger proportions of chicken in the home-prepared items, which were made from formulas typical of those recommended for home use.

All of the market forms of pizza cost more than the home-prepared item. The packaged combination, which required more household preparation than other market forms, cost only about one-fourth more than the home-prepared form. Cost differences between chilled and frozen pizzas were substantial, considering that they required comparable preparation in the home.

Some of the commercial forms cost less than their home-prepared counterparts; about one-half of the canned products and one-fifth of the frozen products studied were in this group. Commercial products that cost less than corresponding home-prepared items were in the plain meats and fish and combination dish categories. Since home-prepared combination dishes generally required considerable preparation time, the difference would be even greater if cost included a money value for time expended.

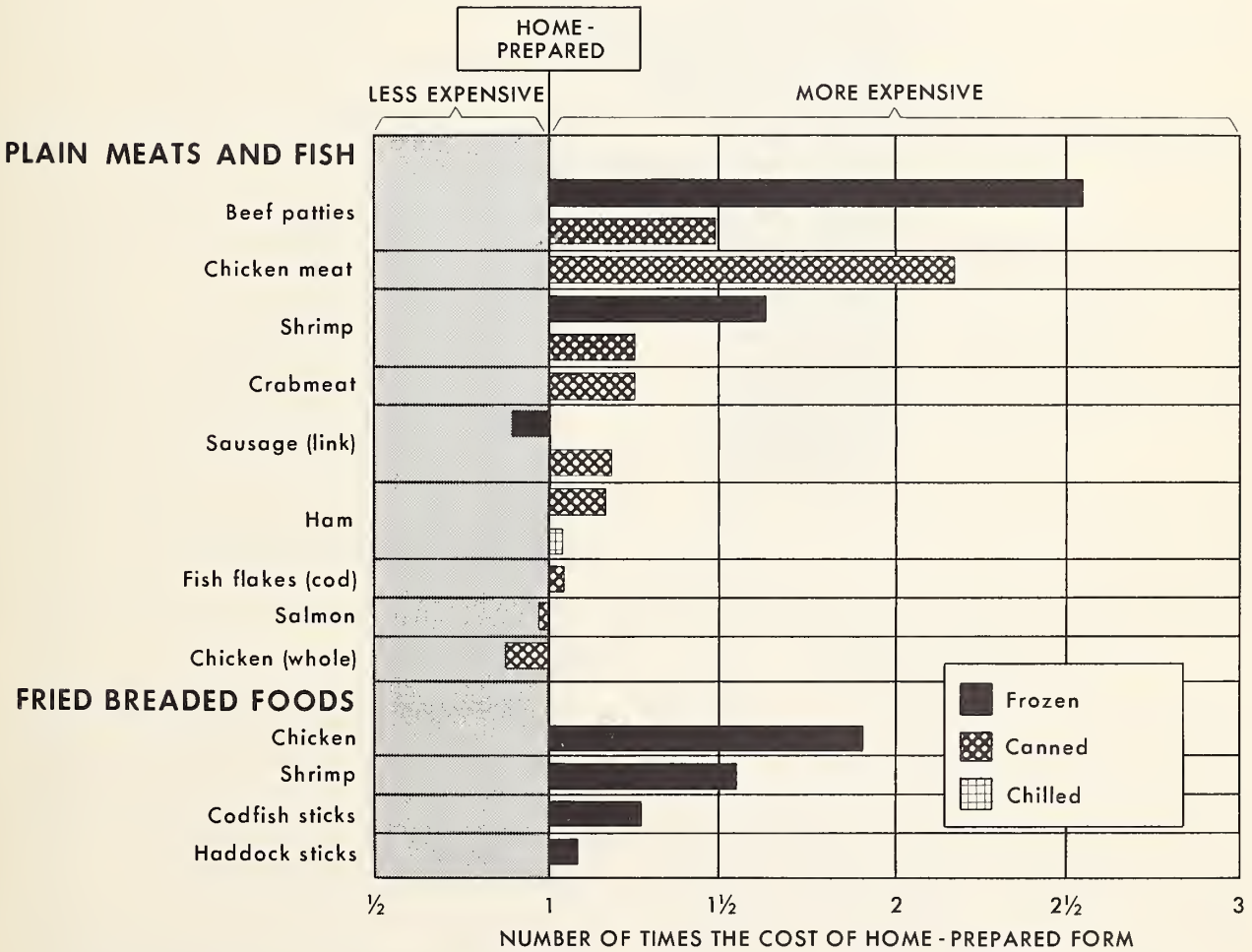

Figure 5.—Relative market cost of commercial and home-prepared plain and breaded meat and fish items.

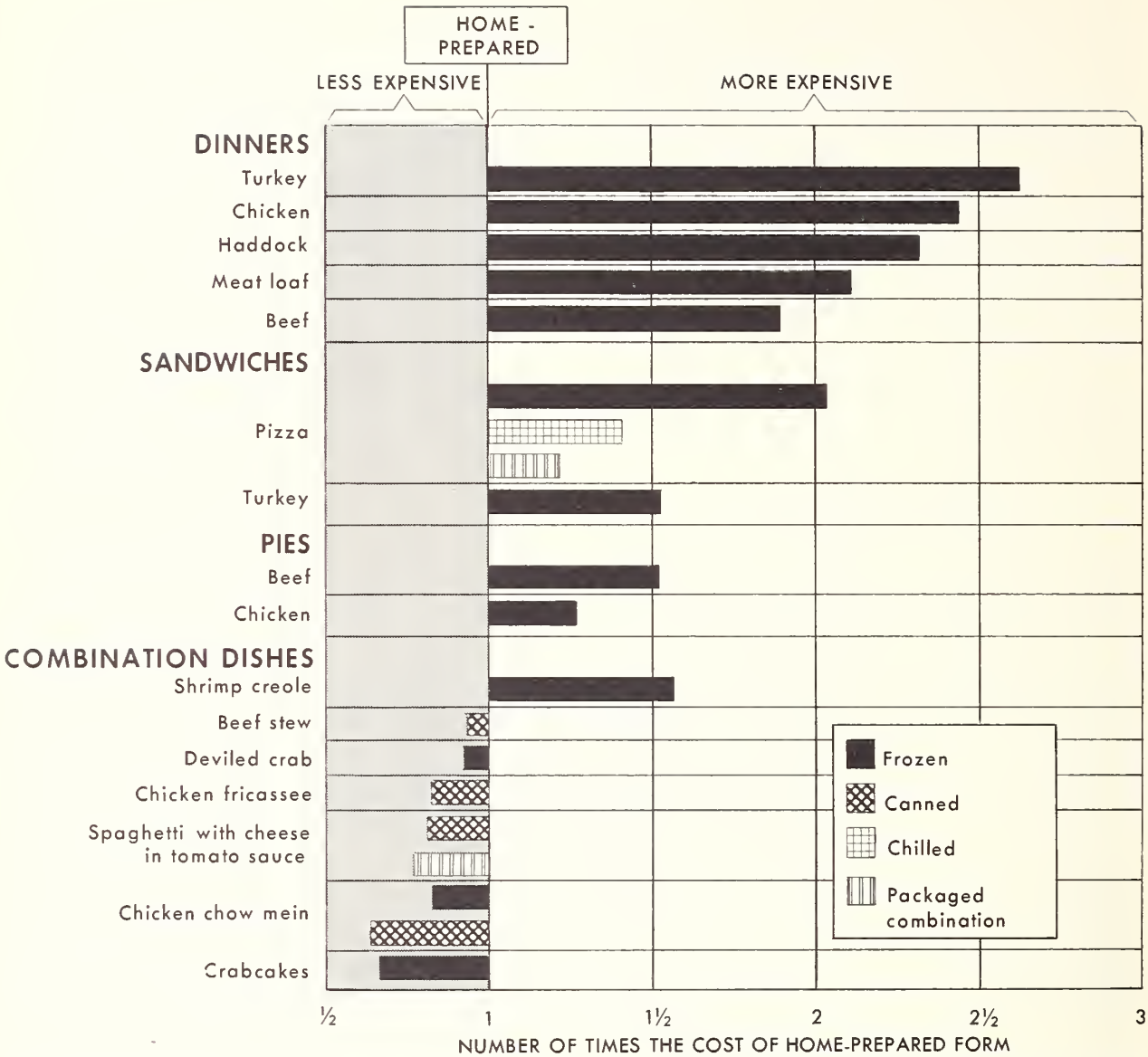

FIGURE 6.—Relative market cost of commercial and home-prepared dinners, sandwiches, pies, and combination dishes.

Proximate Composition

Data for the 215 individual lots of ready-to-eat foods that were analyzed for proximate composition are presented in tables 8 through 12. For products having component parts that were analyzed separately, combining percentages of the individual lots have been used to calculate composition values for the total product. The food samples have been identified by number, to facilitate comparisons of data on composition with data on preparation time in table 1 and yield data in tables 2 through 6.

General Observations

At the ready-to-eat stage of preparation, moisture content of pies, sandwiches, and breaded foods such as fish sticks was less than moisture content of dinners, plain meats, and combination dishes such as stew. As expected, moisture content was a key factor in determining levels of other nutrients and of energy values.

Ash values were highest in cured meats and canned foods packed in brine. About 70 percent of the items studied contained 2 percent or less total ash, indicating only moderate salt levels.

Food energy values per 100 grams (fig. 7) were highest (200 Calories or more) in sandwiches, pies, and fried breaded foods, and in a few other items such as beef patties, sausage, frozen crabcakes, frozen deviled crab, and home-prepared meat loaf. Although caloric values tended to follow fat content, a number of the foods—pizza and some sandwiches, for instance—contained less than 10 percent fat (fig. 8) and less than 50 percent moisture but were relatively high in carbohydrate (fig. 9) and thus in energy value. Low caloric values (less than 150 Calories per 100 grams) were found in many of the combination dishes and in some plain meats, dinners, and main courses. These foods were generally high in moisture and low—less than 10 percent—in fat (fig. 8).

Foods having a moderate amount of fat included pies, breaded foods, and a few of the combination dishes. Most of the fat in the pies was in the crusts and, for the home-prepared items, in the gravy. Bread or crumb coatings, which tend to absorb fat, were used in the other foods moderate in fat, and most of these items were cooked by frying. Foods highest in fat were sausage, which ranged from 28 to 43 percent fat in the drained cooked links, and frozen beef patties, which contained approximately 25 percent fat in the drained cooked patties.

For a few of the foods—fish flakes, canned chicken chow mein, and canned spaghetti—less than 10 percent of the caloric value came from fat. One food—sausage—had nearly 80 percent of its energy value in the form of fat. About half of the total caloric value of pies and breaded foods came from fat. For other recipe groups, fat furnished about a third of the energy value (table 13).

Muscle meats and fish are generally considered to contain only negligible amounts of carbohydrate (*19*) and have thus been omitted from figure 9. The sausage, however, contained some sugar, as indicated on package labels. (See appendix.)

The percentage of calories derived from carbohydrate ranged from 0 for most plain meats and 2 for sausage to nearly 50 for sandwiches (table 13). For most other recipe groupings of food, carbohydrate furnished approximately a third of the total energy value.

Most plain meats and fried breaded foods contained 15 percent or more protein (fig. 10) in contrast to spaghetti and commercial chow mein, which contained only 5 percent or less protein. Other combination foods, dinners and main courses, sandwiches, and pies contained between 5 and 15 percent protein. The percentage of calories derived from protein ranged from an average of 16 for pies to 69 for plain meats and fish. For the other recipe groupings of food, calories derived from protein were approximately a quarter to a third of the total (table 13). No attempt was made to determine the quality of the protein by assay for amino acid content; however, all of the foods contained some protein from high-quality sources—meat, fish, poultry, and/or dairy products—so that most of these foods would rate as good sources of protein, both in terms of quality and quantity.

Variations Among Lots of the Same Product

For most forms of foods, composition values were remarkably consistent among the lots analyzed (tables 8, 9, 10, 11, and 12). Ranges among lots in composition values, expressed as percentages of the lowest values, were highest for fat and ash, averaging 31 and 29 percent, respectively, and lowest for moisture, which averaged 6 percent. Average ranges among lots for food energy were 13 percent; for protein values, 12 percent.

Commercial Forms Compared With Home-Prepared Forms

To compare commercial products with corresponding home-prepared items, percentages of proximate nutrients in the home-prepared food were given a base value of 100 and corresponding nutrients in the commercial products were expressed as percentages of the base. These data are summarized in terms of commercial form in figure 11 and by recipe type in figure 12.

As figure 11 illustrates, frozen foods were higher in ash and markedly higher in carbohydrate than were their home-prepared counterparts. Protein in the frozen foods, on the other hand, averaged only 86 percent of the amount found in home-prepared items. In canned forms, fat, protein, and caloric values were 20 to 30 percent lower and ash and carbohydrate values were 30 to almost 50 percent higher than in home-prepared. Chilled forms of foods did not differ greatly in overall composition and energy values from their home-prepared counterparts except for fat, which was 14 percent lower in the chilled than in the home-prepared forms.

When grouped according to recipe type (fig. 12), the following patterns of relationships between commercially prepared and home-prepared foods were found. Commercial forms of plain meats and fish were higher in ash than were home-prepared forms, probably because many of the canned products analyzed were packed in brine, broth, or gravy.

Commercial breaded foods and sandwiches were approximately 10 percent lower in moisture and protein and 10 percent higher in caloric values and fat than were corresponding home-prepared items. Carbohydrate content of these commercial items was even greater, averaging 60 percent higher than in the home-prepared forms. The high proportion of carbohydrate and greater fat content of the commercial forms of these breaded fish and chicken products were probably caused by the

greater proportions of breading used. Average percentages of breading with absorbed fat found in these products were 30 for home-prepared items and 41 for frozen (percentages based on data in tables 3 and 5).

Market forms of main-dish pies, in general, had about 20 percent lower fat, protein, and energy values than did the home-prepared. For commercial combination dishes, fat and protein were about 30 percent lower, and ash about 30 percent higher than in the home-prepared; carbohydrate content was on the average twice that found in home-prepared forms.

These general findings of lower fat, protein, and caloric values and higher ash and carbohydrate contents in commercially prepared foods than in home-prepared counterparts are similar to comparisons found with commercial and home-prepared forms of baked products (*18*).

Commercial Forms Compared With Each Other

Market forms of the foods studied differed considerably in content of some nutrients not only from the home-prepared forms but also from each other (fig. 11). This was also true of commercial forms of products that were not included in figure 11, because data on home-prepared forms were not available for comparison. Frozen beef patties and sausage, for instance, were considerably higher in fat and caloric value and lower in moisture and ash than were their canned counterparts (tables 8 and 10).

Both separable lean and separable fat of ham were reasonably constant in composition, regardless of purchase form (table 10). The proportions of lean to fat in the canned hams, however, were much higher than in most of the cook-before-eating and fully cooked hams analyzed. As a result, the ether-extractable fat content of the combined lean plus fat portions was considerably lower for canned hams than for the other types analyzed. For these 5-pound canned hams, the juices and gelatin averaged 8 percent of the total weight as purchased. If analytical data for juices are included the average composition for total product of these canned hams as purchased was: 73 percent lean, 6 percent fat, 8 percent juices, 10 percent gristle and other inedible matter, and 3 percent handling loss. Proximate composition of the combined lean, fat, and juices averaged 69 percent moisture, 9 percent fat, 18 percent protein, and 4 percent ash. With this composition, the total product was still generally higher in moisture and lower in extractable fat than the lean plus fat portions of cook-before-eating or fully cooked hams (table 10). The 12-pound canned hams for which yield data are reported in table 4 were also low in separable fat, averaging 10 percent by weight of the heated ham as compared with more than 25 percent separable fat in the fully cooked and cook-before-eating forms.

The 5-pound canned hams analyzed in this study averaged 9.5 percent fat and 19.3 percent protein in the lean plus fat portions. These data indicate leaner products than the 4- to 7-pound domestic canned hams analyzed in another study of canned hams purchased in the market (*6*). In that study, average values for extractable fat and protein in meat without juices were 14 and 17 percent, respectively (lean and fat portions were not separated). Considerable variability in composition among lots of canned ham could be expected, because manufacturers' practices differ regarding the amount of trimming done and the portions of the ham selected for canning (*6*). Also, some variation might be caused by degree of fatness of the animals.

Whole canned chicken as purchased averaged 51 percent broth by weight, whereas boned chicken contained less than 40 percent broth. Per purchase unit, canned boned chicken was thus a more concentrated source of protein and fat than was the canned whole chicken, even though protein values per 100 grams of meat alone were about the same.

Composition and Caloric Values of Individual Servings or Food Units

Many of the foods included in this investigation are commonly purchased and served as units; i.e., a patty of meat, a whole sandwich, or an individual pie. Proximate composition and energy values for such units have, therefore, been calculated and assembled (table 14).

Comparisons of frozen and canned beef patties show that the average frozen patty weighed only slightly more than the canned patty, yet contained less moisture, more than double the fat, and more protein than did a canned patty. An individual link of frozen sausage in both weight and nutrient content was approximately twice as great as a link of canned sausage.

Of the platters analyzed, fried chicken was highest in fat, energy value, and protein. Beef main course was lowest in fat and energy value, yet high in protein. For this prepared meal, which contained one less vegetable than did the full dinners, a high protein content is not surprising. For all of these dinners, protein content was substantial, ranging from 22 grams to more than 35 grams.

Main-dish pies were high in energy value per portion, ranging from approximately 400 Calories in frozen beef pie to more than 650 Calories in home-prepared tuna pies. These caloric values for beef and poultry pies agree closely with data given in tables of food values (*29*) and are among the highest values for food energy per serving of foods commonly served, as reported in that pub-

lication. Protein content per serving ranged from 16 to 24 grams and, although substantial, was generally lower than that of plate dinners.

Chicken chow mein in all forms was low in caloric value and fat content per serving (table 14). The addition of a usual serving of fried noodles, which are high in caloric value and fat, more than doubled the energy value and fat content of these portions. In a similar fashion, chicken fricassee, which by itself is low in energy value and fat, is usually served with biscuits, toast, or rice. The addition of one unbuttered biscuit to a usual serving of fricassee resulted in an approximate doubling of fat and caloric contents in the home-prepared product, and tripling in the canned product.

TABLE 8.—BEEF PRODUCTS: *Proximate composition of ready-to-eat foods from different market forms*

Identification number [1]	Description of sample and date received	Composition of 100-gram portion					
		Moisture	Food energy	Fat	Protein	Ash	Carbohydrate (by difference)
	Beef barbecue sandwich [2] (chopped beef):						
1	Home-prepared:	*Grams*	*Calories*	*Grams*	*Grams*	*Grams*	*Grams*
	12/58	52.9	217	7.4	14.5	2.3	22.9
	2/59	55.3	193	4.6	15.1	2.5	22.5
	3/59	51.7	226	8.3	14.0	2.5	23.5
3	Purchased, frozen:						
	12/58	43.6	281	12.2	11.4	1.6	31.2
	2/59	42.8	284	12.1	12.1	1.5	31.5
	4/59	40.9	304	14.5	12.0	1.4	31.2
	Beef main course:						
9	Purchased, frozen:						
	1/59	74.8	117	3.7	13.6	1.4	6.5
	2/59	77.7	102	2.9	12.1	1.2	6.1
	3/59	76.4	108	3.1	13.4	1.3	5.8
	Beef patties:						
	Purchased:						
11	Canned:						
	6/60:						
	Meat	61.0	206	11.9	23.1	3.0	----
	Gravy	56.1	290	25.8	6.7	4.3	7.1
	Meat 71% and gravy 29%	59.6	230	15.9	18.3	3.4	2.8
	6/60:						
	Meat	61.9	200	11.6	22.4	3.0	----
	Gravy	61.6	250	22.1	6.5	4.0	5.8
	Meat 66% and gravy 34%	61.8	217	15.2	17.0	3.3	2.7
	7/60:						
	Meat	61.5	208	12.3	22.8	3.0	----
	Gravy	67.6	196	16.3	5.6	4.2	6.3
	Meat 60% and gravy 40%	63.9	203	13.9	15.9	3.5	2.8
12	Frozen: [3]						
	3/60:						
	Meat	50.5	324	24.5	24.1	1.0	----
	Drippings	7.3	824	90.5	1.8	.5	----
	Meat 81% and drippings 19%	42.3	419	37.0	19.9	.9	----
	9/60:						
	Meat	49.2	330	25.0	24.5	.9	----
	Drippings	12.8	759	82.9	2.6	.8	----
	Meat 86% and drippings 14%	44.1	390	33.1	21.4	.9	----
	9/60:						
	Meat	49.7	328	24.8	24.4	.9	----
	Drippings	9.0	799	87.6	2.1	.8	----
	Meat 89% and drippings 11%	45.2	380	31.7	21.9	.9	----
	Beef pie:						
13	Home-prepared:						
	1/59	51.1	266	15.2	12.2	1.6	19.9
	2/59	55.6	243	14.1	10.1	1.6	18.6
	3/59	55.4	238	13.2	11.5	2.0	17.9
14	Purchased, frozen:						
	1/59	62.3	195	9.9	7.3	1.7	18.8
	2/59	64.6	180	8.6	7.9	1.7	17.2
	3/59	63.4	185	8.7	9.5	1.6	16.8

See footnotes at end of table.

TABLE 8.—BEEF PRODUCTS: *Proximate composition of ready-to-eat foods from different market forms*—Con.

Identification number [1]	Description of sample and date received	Composition of 100-gram portion					
		Moisture	Food energy	Fat	Protein	Ash	Carbohydrate (by difference)
	Beef stew:						
15	Home-prepared:	*Grams*	*Grams*	*Calories*	*Grams*	*Grams*	*Grams*
	1/59	77.4	106	4.1	7.6	1.2	9.7
	2/59	79.6	86	1.8	7.6	1.2	9.8
	3/59	79.8	90	2.7	7.5	1.2	8.8
16	Purchased, canned:						
	1/59	83.2	72	2.2	5.1	1.7	7.8
	2/59	82.8	69	1.2	5.2	1.6	9.2
	3/59	82.9	72	2.0	4.6	1.8	8.7
	Meat loaf:						
19	Home-prepared:						
	1/59	60.1	260	20.6	14.4	1.5	3.4
	3/59	60.2	256	19.9	15.2	1.5	3.2
	4/59	62.0	237	17.4	15.4	1.4	3.8
	Meat-loaf main course:						
20	Purchased, frozen:						
	1/59:						
	Meat loaf	66.5	179	10.0	13.0	2.0	8.5
	Green beans and tomato sauce	89.8	40	1.9	1.7	1.2	5.4
	Meat 70% and beans and sauce 30%	73.5	137	7.6	9.6	1.7	7.6
	2/59:						
	Meat loaf	64.2	192	10.9	14.1	2.2	8.6
	Green beans and tomato sauce	89.0	39	1.0	1.6	1.3	7.1
	Meat 63% and beans and sauce 37%	73.4	135	7.2	9.5	1.9	8.0
	3/59:						
	Meat loaf	67.8	169	8.9	13.4	1.8	8.1
	Green beans and tomato sauce	88.3	40	1.0	2.4	1.6	6.7
	Meat 73% and beans and sauce 27%	73.3	134	6.8	10.4	1.7	7.8

[1] All samples have been numbered to facilitate comparisons of data on composition with data on preparation time in table 1 and yield data in table 2.

[2] Includes buns.

[3] Not the same lots as item 12, table 1.

TABLE 9.—FISH AND SHELLFISH PRODUCTS: *Proximate composition of ready-to-eat foods from different market forms*

Identification number [1]	Description of sample and date received	Composition of 100-gram portion					
		Moisture	Food energy	Fat	Protein	Ash	Carbohydrate (by difference)
	Codfish-stick dinner:						
21	Home-prepared:	*Grams*	*Calories*	*Grams*	*Grams*	*Grams*	*Grams*
	7/60	61.8	183	7.2	12.2	1.7	17.1
	9/60	67.8	153	5.8	10.4	1.3	14.7
	11/60	68.0	156	6.4	10.7	1.0	13.9
	Purchased, frozen:						
22	7/60	65.0	166	6.3	9.5	1.1	18.1
	11/60	64.7	165	6.2	9.7	1.7	17.7
	11/60	66.4	158	6.0	9.3	1.4	16.9
	Codfish sticks, fried:						
23	Home-prepared:						
	5/60	52.0	261	14.5	24.6	2.2	6.7
	9/60	61.2	219	13.1	18.7	1.3	5.7
	11/60	61.0	209	11.1	18.5	1.6	7.8
24	Purchased, frozen:						
	5/60	57.6	200	7.6	15.2	1.6	18.0
	8/60	57.9	202	8.5	14.6	1.8	17.2
	9/60	53.1	223	8.6	16.9	1.4	20.0

See footnote at end of table.

TABLE 9.—FISH AND SHELLFISH PRODUCTS: *Proximate composition of ready-to-eat foods from different market forms*—Continued

Identification number [1]	Description of sample and date received	Composition of 100-gram portion					
		Moisture	Food energy	Fat	Protein	Ash	Carbohydrate (by difference)
	Fish flakes:						
	Home-prepared:						
25	From frozen cod fillets:	*Grams*	*Calories*	*Grams*	*Grams*	*Grams*	*Grams*
	5/60	78.3	93	.8	20.2	1.4	
	9/60	76.6	97	.9	20.8	1.4	
	9/60	77.9	92	.7	20.1	.9	
26	From frozen haddock fillets:						
	5/60	75.2	107	1.0	23.0	1.2	
	9/60	76.5	98	1.0	20.9	1.1	
	9/60	73.6	110	1.1	23.5	1.2	
27	Purchased, canned:						
	5/60	75.9	102	.8	22.3	2.3	
	9/60	78.6	78	.5	17.1	2.0	
	Haddock dinner:						
28	Home-prepared:						
	8/60	75.5	119	5.4	8.1	1.3	9.7
	9/60	76.7	112	4.9	8.1	1.3	9.0
	11/60	75.5	122	5.5	8.4	.8	9.8
29	Purchased, frozen:						
	8/60	76.9	110	4.5	9.5	1.3	7.8
	11/60	77.3	107	4.3	9.2	1.5	7.7
	11/60	74.9	119	4.1	12.1	.8	8.1
	Haddock fish sticks:						
30	Home-prepared:						
	5/60	56.5	235	13.0	20.7	2.1	7.7
	8/60	59.4	221	12.1	19.7	1.4	7.4
	10/60	57.3	233	12.8	19.4	1.4	9.1
31	Purchased, frozen:						
	5/60	54.0	227	10.1	16.1	1.4	18.4
	9/60	51.8	238	11.4	15.6	2.6	18.6
	9/60	53.5	232	11.4	15.6	2.2	17.3
	Salmon:						
32	Home-prepared:						
	5/60	67.8	158	5.2	26.1	1.2	
	9/60	71.2	134	2.5	26.1	1.2	
	10/60	70.6	132	2.6	25.5	1.4	
33	Purchased, canned:						
	5/60	65.2	189	9.9	23.4	2.0	
	6/60	65.8	174	8.1	23.6	3.5	
	9/60	67.8	151	4.5	25.8	1.4	
	Tuna pie:						
34	Home-prepared:						
	7/60	48.4	296	18.5	9.2	1.0	22.9
	9/60	47.2	307	20.4	8.9	1.5	22.0
	11/60	48.3	287	17.3	9.0	1.8	23.6
35	Purchased, frozen:						
	7/60	59.7	220	12.8	7.2	1.5	18.8
	9/60	58.1	227	12.9	8.2	1.7	19.1
	9/60	54.2	246	14.3	9.1	2.4	20.0
	Crabcakes:						
36	Home-prepared:						
	7/60	67.0	179	10.7	18.8	2.4	1.1
	9/60	64.7	193	11.1	16.8	1.8	5.6
	11/60	64.7	198	12.0	18.3	1.6	3.4
37	Purchased, frozen:						
	7/60	46.3	307	20.1	14.1	2.6	16.9
	9/60	48.0	302	21.1	13.6	3.3	14.0
	10/60	51.3	275	18.2	13.1	3.2	14.2
	Crabmeat:						
	Purchased:						
38	Cooked, chilled:						
	8/60	77.5	98	1.9	19.0	2.0	
	11/60	75.3	117	3.9	19.1	1.8	
	11/60	74.0	115	2.9	20.7	2.0	

See footnote at end ot table.

TABLE 9.—FISH AND SHELLFISH PRODUCTS: *Proximate composition of ready-to-eat foods from different market forms*—Continued

Identification number [1]	Description of sample and date received	Composition of 100-gram portion					
		Moisture	Food energy	Fat	Protein	Ash	Carbohydrate (by difference)
	Crabmeat—Continued						
39	Canned:	*Grams*	*Calories*	*Grams*	*Grams*	*Grams*	*Grams*
	7/60	82.0	75	1.3	14.9	1.8	----
	9/60	81.0	78	1.4	15.2	2.0	----
	9/60	81.6	77	1.3	15.2	1.9	----
	Crab, deviled:						
40	Home-prepared:						
	6/60	69.6	165	9.6	14.1	1.8	4.9
	9/60	71.1	157	9.3	13.3	1.8	4.5
	10/60	69.3	160	8.7	13.5	2.2	6.3
41	Purchased, frozen:						
	6/60	51.6	251	13.8	11.1	3.1	20.4
	9/60	54.0	236	12.6	10.5	2.9	20.0
	9/60	53.7	241	13.2	10.4	2.7	20.0
	Shrimp:						
42	Home-prepared:						
	6/60	74.3	107	1.5	22.0	3.0	----
	8/60	77.0	94	1.3	19.3	2.4	----
	9/60	75.1	119	2.6	22.3	2.1	----
	Purchased:						
43	Canned:						
	8/60	72.3	104	1.5	21.3	4.8	----
	8/60	73.0	104	1.5	21.3	3.7	----
	9/60	74.6	95	1.5	19.1	3.0	----
44	Chilled, cooked, peeled, deveined:						
	8/60	72.7	119	1.6	24.4	2.2	----
	8/60	74.6	111	1.5	22.9	2.5	----
	9/60	75.0	107	1.2	22.5	2.1	----
45	Frozen, raw, peeled, deveined:						
	6/60	75.1	113	2.4	21.3	1.8	----
	8/60	74.7	114	1.5	23.5	1.9	----
	9/60	75.6	108	1.6	21.9	2.1	----
	Shrimp, breaded, fried:						
	Home-prepared:						
46	From raw shrimp in shell:						
	8/60	56.2	228	11.6	16.2	2.5	13.5
	9/60	59.2	209	10.3	17.7	2.5	10.3
	10/60	59.6	208	10.3	18.0	2.5	9.6
47	From frozen, raw, peeled, deveined shrimp:						
	8/60	52.3	247	12.0	18.8	2.1	14.8
	9/60	53.7	239	11.0	18.3	1.6	15.4
	10/60	51.8	249	11.6	19.4	1.7	15.5
	Purchased:						
48	Frozen, raw, breaded:						
	7/60	42.4	294	15.1	11.1	3.1	28.3
	9/60	45.9	270	12.4	13.0	2.4	26.3
	10/60	42.4	288	13.5	11.4	2.8	29.9
49	Frozen, prefried:						
	8/60	36.7	336	18.1	20.8	3.1	21.3
	8/60	35.3	339	18.2	19.6	3.9	23.0
	9/60	35.0	347	19.9	19.3	4.0	21.8
	Shrimp creole:						
50	Home-prepared:						
	7/60	75.8	112	3.9	7.8	1.4	11.1
	9/60	77.8	102	3.3	8.1	1.2	9.6
	11/60	77.2	109	3.9	7.6	.8	10.5
51	Purchased, frozen:						
	7/60	82.8	83	3.2	6.3	.7	7.6
	11/60	80.9	86	3.5	6.1	1.7	7.8
	11/60	82.4	82	3.7	5.6	1.5	6.8

[1] All samples have been numbered to facilitate comparisons of data on composition with data on preparation time in table 1 and yield data in table 3.

TABLE 10.—PORK PRODUCTS: *Proximate composition of ready-to-eat foods from different market forms*

Identification number [1]	Description of sample and date received	Composition of 100-gram portion					
		Moisture	Food energy	Fat	Protein	Ash	Carbohydrate (by difference)
	Ham, cured:						
	Home-prepared:						
52	Cook-before-eating (shank half):						
	Brand A:						
	6/60:	*Grams*	*Calories*	*Grams*	*Grams*	*Grams*	*Grams*
	Separable lean	68.8	140	6.8	18.4	5.5	
	Separable fat	29.4	573	60.2	7.1	3.3	
	Lean 68% and fat 32%	56.2	279	23.9	14.8	4.8	
	Drippings	.1	888	98.1	.7	.8	
	6/60:						
	Separable lean	69.5	124	3.8	21.1	4.5	
	Separable fat	27.6	584	61.3	7.4	2.2	
	Lean 69% and fat 31%	56.5	267	21.6	16.9	3.8	
	Drippings	2.6	835	91.6	2.1	3.0	
	6/60:						
	Separable lean	66.2	160	7.1	22.4	3.6	
	Separable fat	27.4	587	60.7	9.3	1.9	
	Lean 68% and fat 32%	53.8	297	24.3	18.2	3.1	
	Drippings	.5	876	96.4	1.4	1.3	
	Purchased:						
53	Fully cooked, chilled (shank half):[2]						
	Brand B:						
	6/60:						
	Separable lean	66.6	152	6.1	22.7	4.0	
	Separable fat	24.1	620	65.2	7.6	1.7	
	Lean 67% and fat 33%	52.6	306	25.6	17.7	3.2	
	Drippings	.2	889	98.3	.6	.3	
	6/60:						
	Separable lean	65.1	141	4.3	24.0	4.3	
	Separable fat	27.0	574	59.7	8.3	2.2	
	Lean 67% and fat 33%	52.5	284	22.6	18.8	3.6	
	Drippings	.6	883	97.2	1.4	1.0	
	6/60:						
	Separable lean	66.0	143	4.8	23.3	4.5	
	Separable fat	24.0	612	64.0	8.0	2.0	
	Lean 67% and fat 33%	52.1	298	24.3	18.3	3.7	
	Drippings	.2	893	98.6	.8	.5	
54	Fully cooked, chilled (whole ham):[3]						
	Brand A:						
	12/59:						
	Separable lean	68.1	132	4.5	21.5	4.2	
	Separable fat	24.5	647	69.6	4.5	1.4	
	Lean 76% and fat 24%	57.6	256	20.1	17.4	3.5	
	Brand B:						
	12/59:						
	Separable lean	68.2	140	4.7	22.9	3.2	
	Separable fat	23.9	647	69.2	5.3	1.1	
	Lean 76% and fat 24%	57.6	262	20.2	18.7	2.7	
	Brand C, semi-boned:						
	12/59:						
	Separable lean	66.6	134	5.7	19.3	7.0	
	Separable fat	18.4	688	73.9	4.9	2.2	
	Lean 90% and fat 10%	61.8	189	12.5	17.9	6.5	
56	Canned, 5 pounds:[3]						
	Brand A:						
	12/59:						
	Separable lean	70.2	135	5.8	19.4	3.7	
	Separable fat	24.3	656	70.6	4.4	1.4	
	Lean 93% and fat 7%	67.0	171	10.3	18.4	3.5	
	Juices	87.7	30	.2	6.6	4.7	
	Brand B:						
	12/59:						
	Separable lean	70.8	130	4.9	20.0	3.9	
	Separable fat	29.5	598	64.3	4.3	1.8	
	Lean 90% and fat 10%	66.7	176	10.8	18.4	3.7	
	Juices	88.3	30	.7	5.6	5.2	

See footnotes at end of table.

TABLE 10.—PORK PRODUCTS: *Proximate composition of ready-to-eat foods from different market forms*—Continued

Identification number [1]	Description of sample and date received	Composition of 100-gram portion					
		Moisture	Food energy	Fat	Protein	Ash	Carbohydrate (by difference)
	Ham, cured—Continued						
	Purchased—Continued						
	Canned, 5 pounds[3]—Continued						
	Brand C:						
	12/59:	*Grams*	*Calories*	*Grams*	*Grams*	*Grams*	*Grams*
	Separable lean	69.6	132	4.3	21.9	3.6	--------
	Separable fat	35.1	531	56.0	6.1	2.0	--------
	Lean 94% and fat 6%	67.5	156	7.4	21.0	3.5	--------
	Juices	84.6	45	1.1	8.3	4.6	--------
	Sausage, pork:						
	Purchased:						
59	Canned:[4]						
	3/60:						
	Meat	49.6	334	28.4	17.3	3.6	1.1
	Juices	23.7	657	71.4	2.7	1.9	.3
	Meat 71% and juices 29%	42.1	428	40.9	13.1	3.1	.8
	9/60:						
	Meat	38.8	416	36.1	19.0	3.7	2.4
	Juices	39.7	509	54.9	2.7	2.2	.5
	Meat 74% and juices 26%	39.0	440	41.0	14.8	3.3	1.9
	9/60:						
	Meat	41.1	395	34.0	18.6	4.0	2.3
	Juices	40.1	497	53.2	2.9	2.5	1.3
	Meat 67% and juices 33%	40.8	429	40.3	13.4	3.5	2.0
60	Frozen:[5]						
	3/60:						
	Meat	44.8	359	29.4	19.4	3.5	2.9
	Drippings	10.4	764	82.8	2.5	2.7	1.6
	Meat 95% and drippings 5%	43.1	379	32.1	18.6	3.5	2.7
	9/60:						
	Meat	36.8	462	43.1	14.9	2.7	2.5
	Drippings	.2	896	99.1	.4	.4	--------
	Meat 92% and drippings 8%	33.9	497	47.6	13.7	2.5	2.3
	9/60:						
	Meat	38.0	447	41.0	15.3	2.7	3.0
	Drippings	.1	892	98.4	.4	.3	.8
	Meat 93% and drippings 7%	35.3	478	45.0	14.3	2.5	2.9

[1] All samples have been numbered to facilitate comparisons of data on composition with data on preparation time in table 1 and yield data in table 4.
[2] Analyzed after reheating.
[3] Analyzed as purchased.
[4] Not the same lots as item 59, table 3.
[5] Not the same lots as item 60, table 3.

TABLE 11.—POULTRY PRODUCTS: *Proximate composition of ready-to-eat foods from different market forms*

Identification number [1]	Description of sample and date received	Composition of 100-gram portion					
		Moisture	Food energy	Fat	Protein	Ash	Carbohydrate (by difference)
	Chicken:						
62	Purchased, canned (whole):						
	5/60:	*Grams*	*Calories*	*Grams*	*Grams*	*Grams*	*Grams*
	Meat	65.0	168	4.2	30.5	0.9	
	Skin and fat	70.8	184	14.1	13.2	1.1	
	Meat 72% and skin and fat 28%	66.6	172	7.0	25.7	1.0	
	Broth	90.2	49	3.6	3.8	1.0	
	5/60:						
	Meat	66.7	155	3.9	28.0	.9	
	Skin and fat	74.0	162	11.9	12.8	1.0	
	Meat 77% and skin and fat 23%	68.4	156	5.7	24.5	1.0	
	Broth	92.2	36	2.1	3.9	1.0	
	5/60:						
	Meat	66.2	157	3.6	29.2	.9	
	Skin and fat	73.2	162	11.7	13.2	1.1	
	Meat 73% and skin and fat 27%	68.1	158	5.8	24.9	1.0	
	Broth	90.1	49	3.6	3.8	.9	
	Chicken meat:						
64	Purchased, canned:						
	5/60:						
	Drained solids	62.2	180	6.1	29.4	1.5	
	5/60:						
	Drained solids	62.0	185	7.3	27.9	1.7	
	Broth	73.5	172	15.3	7.9	1.5	
	Solids 64% and broth 36%	66.1	180	10.2	20.7	1.6	
	6/60:						
	Drained solids	62.8	180	6.5	28.5	1.4	
	Broth	69.1	214	20.0	7.9	1.4	
	Solids 62% and broth 38%	65.2	193	11.6	20.7	1.4	
	Chicken chow mein (without noodles):						
65	Home-prepared:						
	12/58	78.3	102	4.2	12.9	1.5	3.1
	2/59	78.3	105	4.9	11.6	1.6	3.6
	3/59	77.4	103	3.8	12.7	1.6	4.5
	Purchased:						
66	Canned:						
	12/58	88.4	39	.2	3.0	1.4	7.0
	2/59	88.6	38	.1	2.8	1.4	7.1
	3/59	89.5	35	.1	2.1	1.4	6.9
67	Frozen:						
	12/58	89.2	40	.8	2.8	1.5	5.7
	2/59	89.3	39	.7	2.4	1.5	6.1
	3/59	89.2	37	.4	2.5	1.6	6.3
68	**Chow mein noodles:**						
	Canned:						
	7/60	.9	494	21.8	12.7	4.4	60.2
	7/60	1.1	506	24.4	14.0	4.1	56.4
	7/60	1.3	506	24.4	14.1	4.1	56.1
71	**Chicken dinner:**						
	Purchased, frozen:						
	12/58	64.2	186	9.5	12.4	1.3	12.6
	1/59	68.2	160	7.6	13.0	1.4	9.8
	2/59	65.8	174	8.5	13.0	1.4	11.3
	Chicken fricassee:						
72	Home-prepared:						
	1/59	73.7	144	7.8	14.7	1.0	2.8
	2/59	70.1	171	10.0	16.1	.8	3.0
	3/59	70.0	172	10.1	15.4	.8	3.7
73	Purchased, canned:						
	12/58	81.9	87	3.5	7.5	1.4	5.7
	1/59	82.2	81	2.8	6.0	1.5	7.5
	2/59	85.0	72	3.0	5.7	1.1	5.2

See footnote at end of table.

TABLE 11.—POULTRY PRODUCTS: *Proximate composition of ready-to-eat foods from different market forms*—Continued

Identification number [1]	Description of sample and date received	Composition of 100-gram portion					
		Moisture	Food energy	Fat	Protein	Ash	Carbohydrate (by difference)
	Chicken, fried:						
	Home-prepared:						
74	Flour-coated:						
	From chilled chicken:						
	Purchased whole:						
	5/60:	*Grams*	*Calories*	*Grams*	*Grams*	*Grams*	*Grams*
	Meat	64. 1	169	5. 3	28. 4	1. 1	
	Skin and fat	36. 3	402	29. 9	19. 3	1. 4	13. 1
	Meat 66% and skin and fat 34%	54. 6	248	13. 7	25. 3	1. 2	5. 2
	Giblets	46. 0	286	14. 2	24. 9	2. 0	12. 9
	5/60:						
	Meat	63. 9	166	5. 9	26. 3	1. 1	
	Skin and fat	39. 4	390	29. 8	10. 2	1. 2	10. 4
	Meat 67% and skin and fat 33%	55. 8	240	13. 8	24. 0	1. 1	5. 3
	Giblets	52. 7	255	13. 0	24. 1	1. 4	8. 8
	5/60:						
	Meat	65. 9	157	4. 4	27. 5	1. 1	
	Skin and fat	41. 5	363	26. 2	19. 3	1. 3	11. 7
	Meat 65% and skin and fat 35%	57. 4	229	12. 0	24. 6	1. 1	4. 9
	Giblets	52. 8	243	10. 6	27. 5	1. 7	7. 4
	Purchased cut up:						
	5/60:						
	Meat	64. 4	172	5. 9	27. 8	1. 1	
	Skin and fat	37. 3	401	30. 3	19. 8	1. 4	11. 2
	Meat 65% and skin and fat 35%	54. 9	252	14. 4	25. 0	1. 2	4. 5
	Giblets	48. 2	270	12. 2	29. 2	1. 7	8. 7
	5/60:						
	Meat	65. 8	165	5. 7	26. 6	1. 0	
	Skin and fat	39. 8	399	31. 9	18. 0	1. 2	9. 1
	Meat 65% and skin and fat 35%	56. 7	247	14. 9	23. 6	1. 1	3. 7
	Giblets	44. 5	289	13. 2	30. 4	1. 8	10. 1
	5/60:						
	Meat	66. 1	163	5. 8	25. 9	1. 0	
	Skin and fat	37. 7	414	33. 2	16. 6	1. 1	11. 4
	Meat 68% and skin and fat 32%	57. 0	243	14. 6	22. 9	1. 1	4. 4
	Giblets	49. 2	275	14. 2	24. 7	1. 5	10. 4
75	Batter-dipped:						
	From chilled, cut-up chicken:						
	5/60:						
	Meat	66. 4	163	5. 7	26. 2	1. 0	
	Skin and fat	37. 6	436	38. 2	14. 3	1. 1	8. 8
	Meat 63% and skin and fat 37%	55. 7	264	17. 7	21. 8	1. 0	3. 8
	5/60:						
	Meat	63. 8	173	5. 9	28. 1	1. 0	
	Skin and fat	31. 7	459	37. 9	19. 4	1. 2	9. 8
	Meat 60% and skin and fat 40%	51. 0	287	18. 7	24. 6	1. 1	4. 6
	5/60:						
	Meat	65. 1	173	6. 8	26. 2	1. 0	
	Skin and fat	36. 0	425	34. 5	18. 0	1. 2	10. 3
	Meat 60% and skin and fat 40%	53. 5	274	17. 9	22. 9	1. 1	4. 6
76	From frozen, cut-up chicken:						
	1/59	54. 0	277	18. 4	22. 0	1. 1	4. 5
	2/59	55. 6	248	13. 7	24. 0	1. 3	5. 4
	3/59	53. 6	280	18. 6	22. 6	1. 0	4. 2
	Purchased, frozen, prefried:						
77	Batter-dipped:						
	12/58	43. 8	314	18. 6	24. 7	2. 2	10. 7
	1/59	45. 8	297	16. 8	23. 6	2. 3	11. 5
	2/59	48. 2	293	17. 8	22. 3	1. 9	9. 8

See footnote at end of table.

TABLE 11.—POULTRY PRODUCTS: *Proximate composition of ready-to-eat foods from different market forms*—Continued

Identification number [1]	Description of sample and date received	Composition of 100-gram portion					
		Moisture	Food energy	Fat	Protein	Ash	Carbohydrate (by difference)
	Chicken pie:						
78	Home-prepared:	*Grams*	*Calories*	*Grams*	*Grams*	*Grams*	*Grams*
	1/59	59. 2	221	12. 5	8. 8	1. 5	18. 0
	2/59	62. 2	207	12. 0	10. 2	1. 3	14. 3
	3/59	54. 1	254	15. 0	11. 0	1. 4	18. 5
80	Purchased, frozen:						
	12/58	61. 8	204	10. 8	7. 3	1. 4	18. 7
	1/59	62. 1	204	11. 1	7. 6	1. 3	17. 9
	2/59	61. 9	204	10. 9	7. 3	1. 4	18. 5
82	**Turkey dinner:**						
	Purchased, frozen:						
	12/58	75. 3	108	2. 5	9. 0	1. 2	12. 0
	1/59	75. 5	108	2. 8	7. 8	1. 2	12. 7
	2/59	73. 3	122	3. 8	8. 2	1. 3	13. 4
86	**Turkey sandwiches:**						
	Purchased, frozen:						
	12/58	45. 8	250	7. 0	16. 4	1. 5	29. 3
	1/59	46. 0	243	5. 7	16. 5	1. 5	30. 3
	2/59	45. 7	246	6. 2	16. 3	1. 6	30. 2

[1] All samples have been numbered to facilitate comparisons of data on composition with data on preparation time in table 1 and yield data in table 5.

TABLE 12.—CHEESE PRODUCTS: *Proximate composition of ready-to-eat foods from different market forms*

Identification number [1]	Description of sample and date received	Composition of 100-gram portion					
		Moisture	Food energy	Fat	Protein	Ash	Carbohydrate (by difference)
	Pizza:						
89	Home-prepared:	*Grams*	*Calories*	*Grams*	*Grams*	*Grams*	*Grams*
	12/58	50. 0	229	8. 0	11. 4	3. 0	27. 6
	1/59	46. 9	243	8. 4	12. 4	3. 1	29. 2
	2/59	48. 1	238	8. 5	12. 1	3. 3	28. 0
	Purchased:						
90	Chilled:						
	12/58	42. 4	256	6. 3	10. 3	2. 3	38. 7
	1/59	44. 9	243	5. 7	10. 1	2. 3	37. 0
	2/59	48. 4	227	5. 3	9. 8	2. 3	34. 2
91	Frozen:						
	12/58	44. 2	263	9. 5	11. 3	2. 6	32. 4
	1/59	43. 7	272	10. 6	10. 7	2. 3	32. 7
	2/59	47. 7	251	9. 8	10. 1	2. 3	30. 1
	Spaghetti:						
93	Home-prepared:						
	12/58	76. 3	107	3. 6	3. 6	1. 2	15. 3
	2/59	78. 5	98	3. 4	3. 3	1. 2	13. 6
	3/59	76. 2	108	3. 8	3. 6	1. 2	15. 2
	Purchased:						
94	Canned:						
	12/58	79. 9	76	. 6	2. 1	1. 7	15. 7
	2/59	80. 0	77	. 7	2. 1	1. 6	15. 6
	3/59	80. 4	74	. 6	2. 0	1. 8	15. 2
95	Packaged combination:						
	12/58	73. 5	110	2. 2	3. 9	1. 6	18. 8
	2/59	73. 1	112	2. 3	4. 1	1. 6	18. 9
	3/59	73. 3	112	2. 6	4. 0	1. 7	18. 4

[1] All samples have been numbered to facilitate comparisons of data on composition with data on preparation time in table 1 and yield data in table 6.

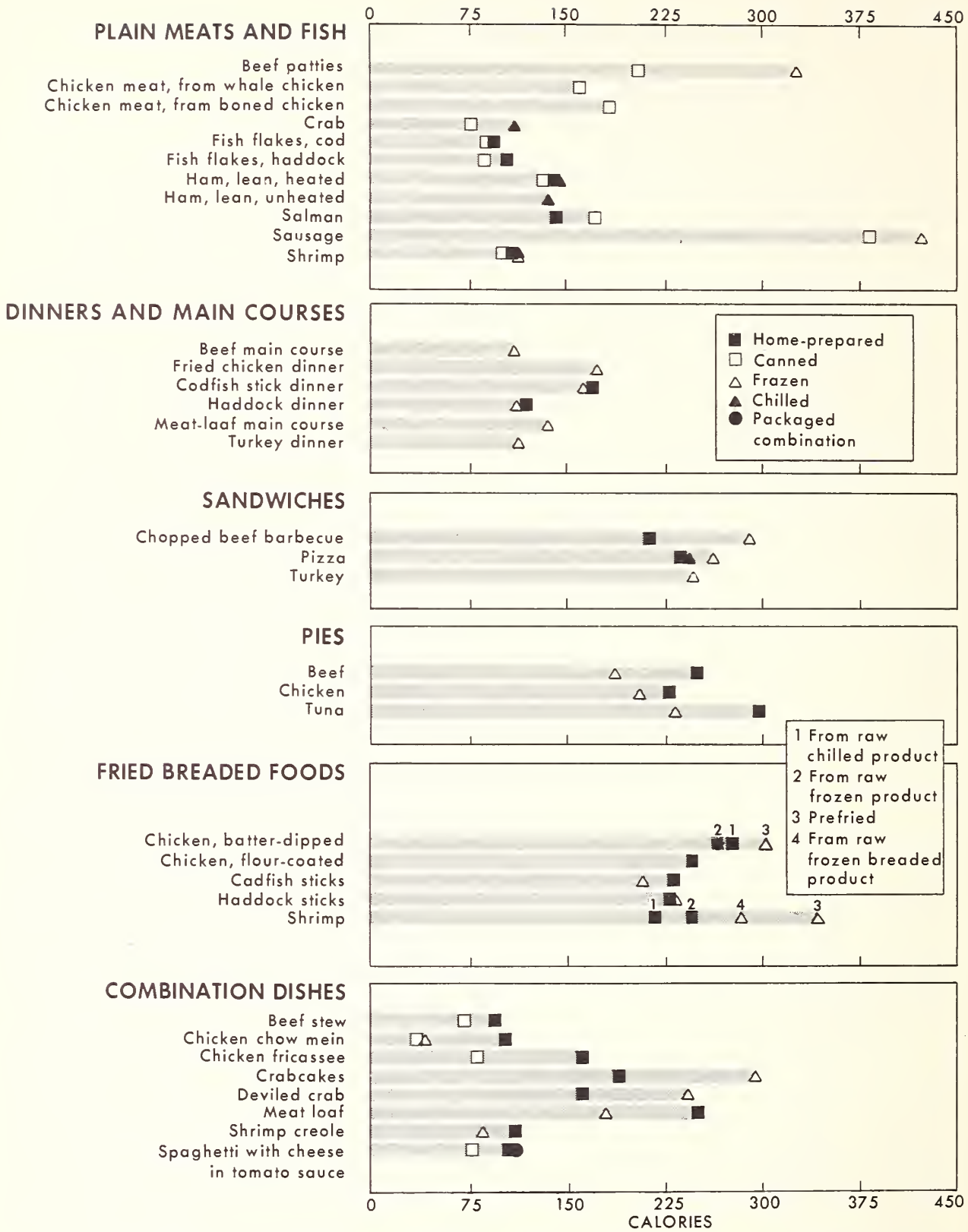

FIGURE 7.—Food energy value per 100 grams of selected ready-to-eat main-dish foods.

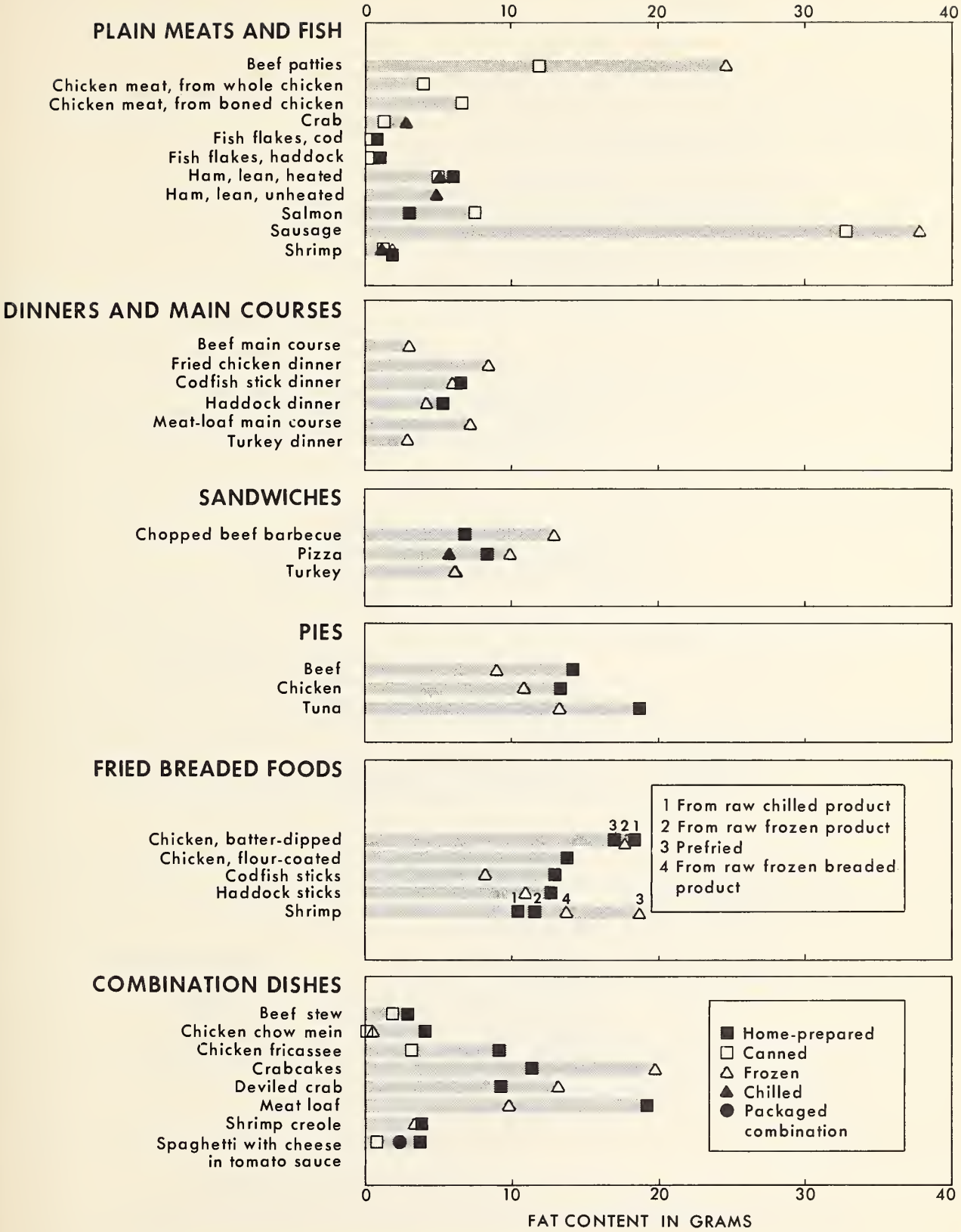

FIGURE 8.—Fat content per 100 grams of selected ready-to-eat main-dish foods.

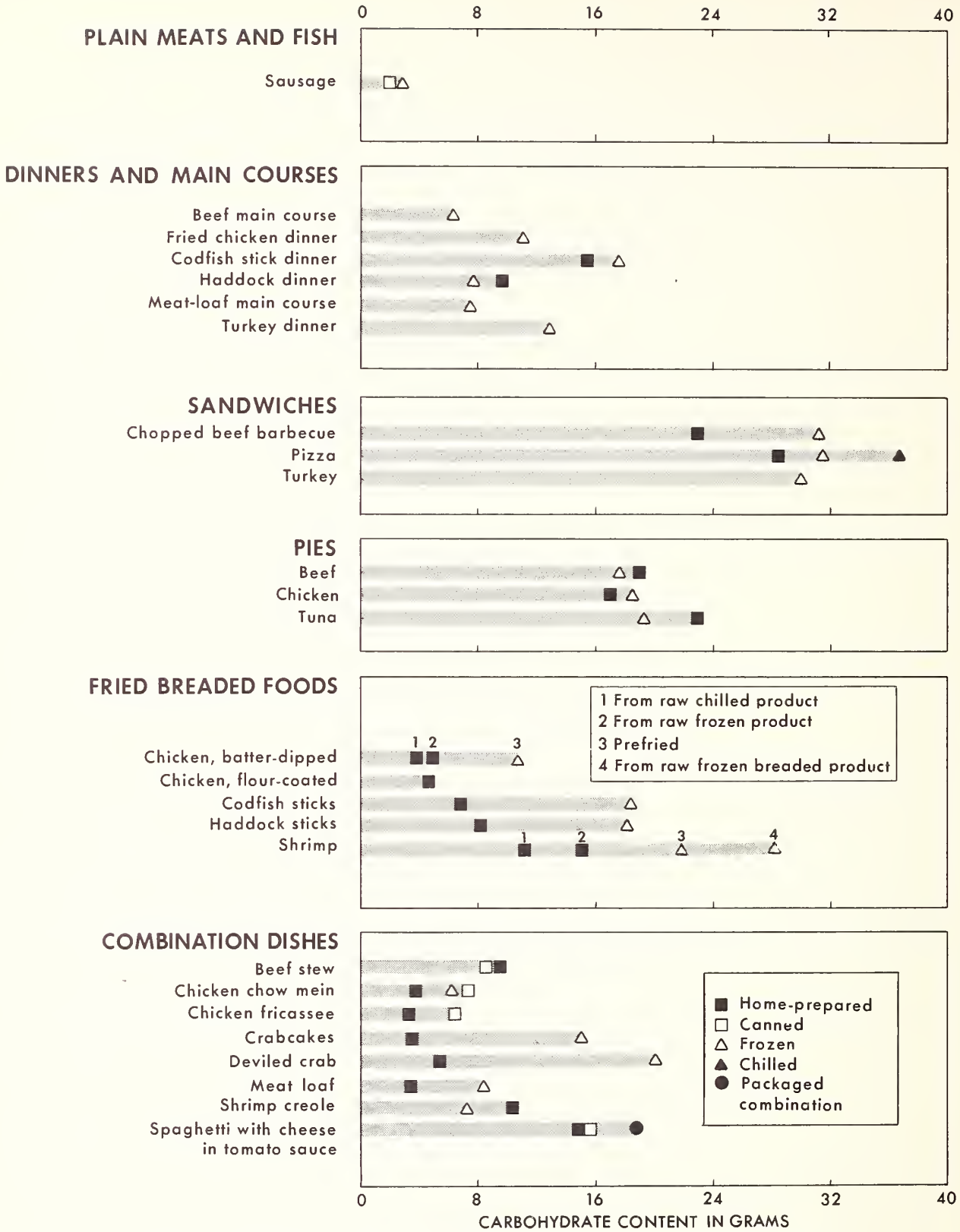

FIGURE 9.—Carbohydrate content per 100 grams of selected ready-to-eat main-dish foods.

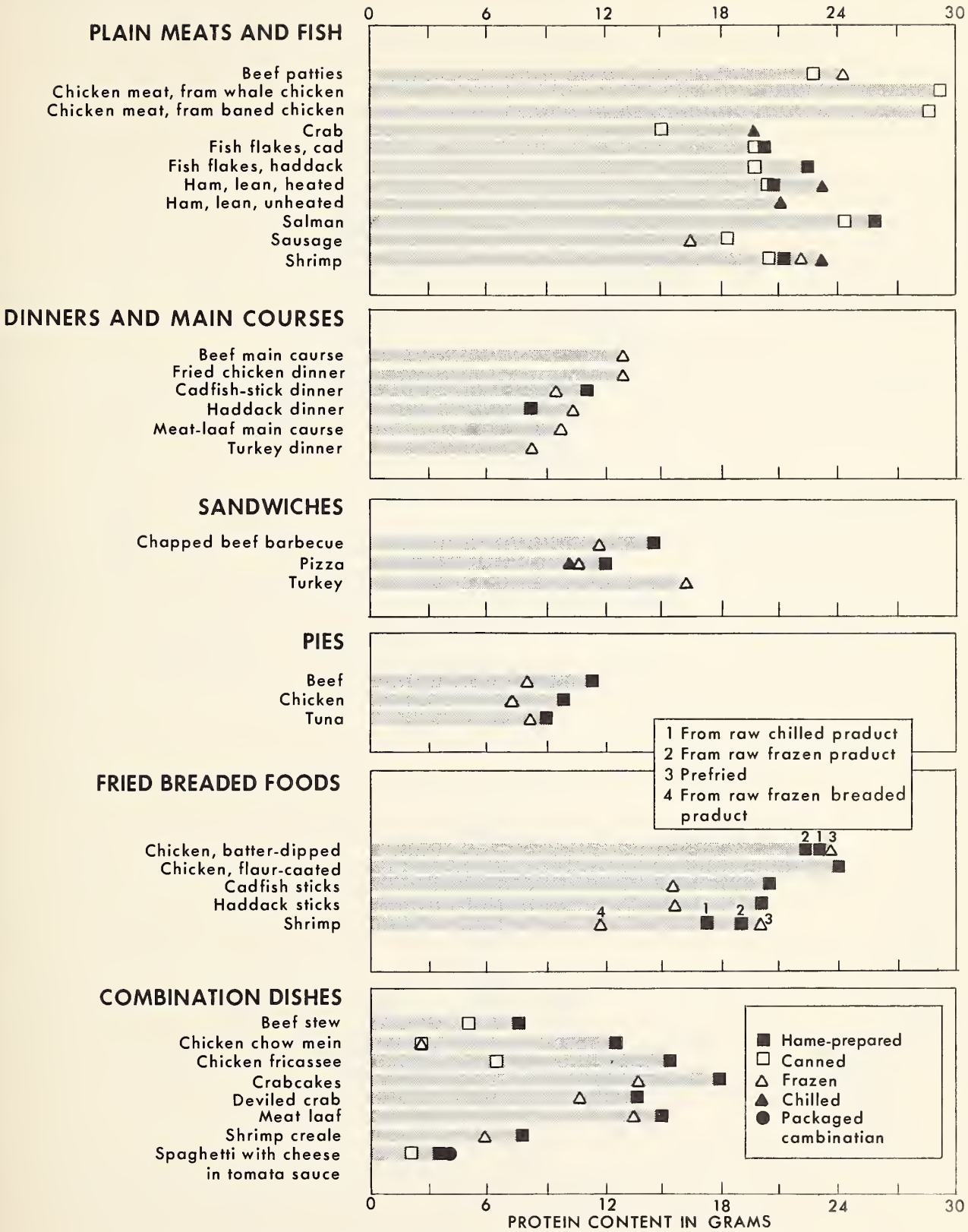

FIGURE 10.—Protein content per 100 grams of selected ready-to-eat main-dish foods.

TABLE 13.—READY-TO-EAT FOODS: *Distribution of total energy value among fat, protein, and carbohydrate*

Food grouping	Proportion of total calories derived from—			
	Fat	Protein	Carbohydrate	
			All products	Carbohydrate-containing products only
By commodity:	*Percent*	*Percent*	*Percent*	*Percent*
Beef products	43	30	27	33
Fish products	34	48	18	28
Pork products	49	50	1	2
Poultry products	39	36	26	29
Cheese products	24	15	61	61
By market form:				
Home-prepared	40	40	19	23
Frozen	41	28	31	34
Canned	28	54	18	47
Package mix	19	14	68	68
Chilled	24	64	12	62
By recipe type:				
Plain meats and fish	31	69	0	2
Dinners and main courses	35	32	32	32
Sandwiches	29	21	49	49
Pies	50	16	34	34
Fried breaded foods	48	33	19	19
Combination dishes	36	28	36	36
Mean for all groups	37	40	23	32

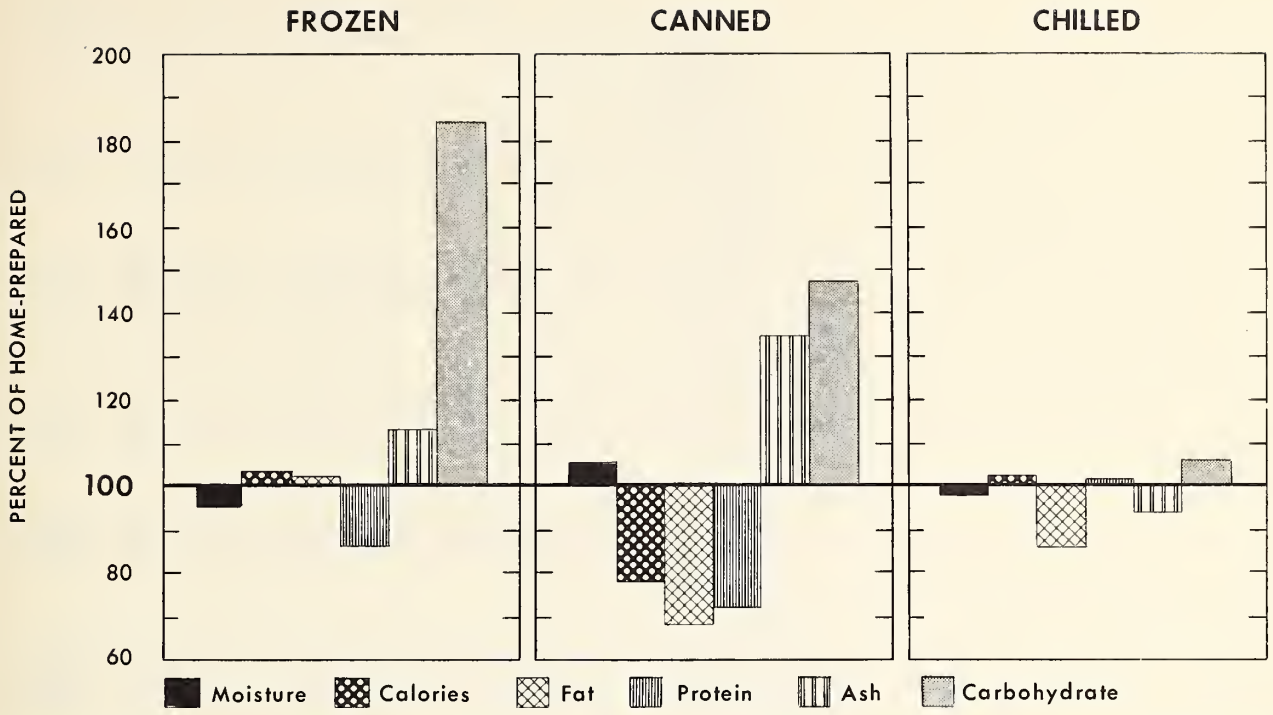

FIGURE 11.—Proximate composition and caloric values of different commercial forms of main-dish foods, expressed as percentages of values for home-prepared forms.

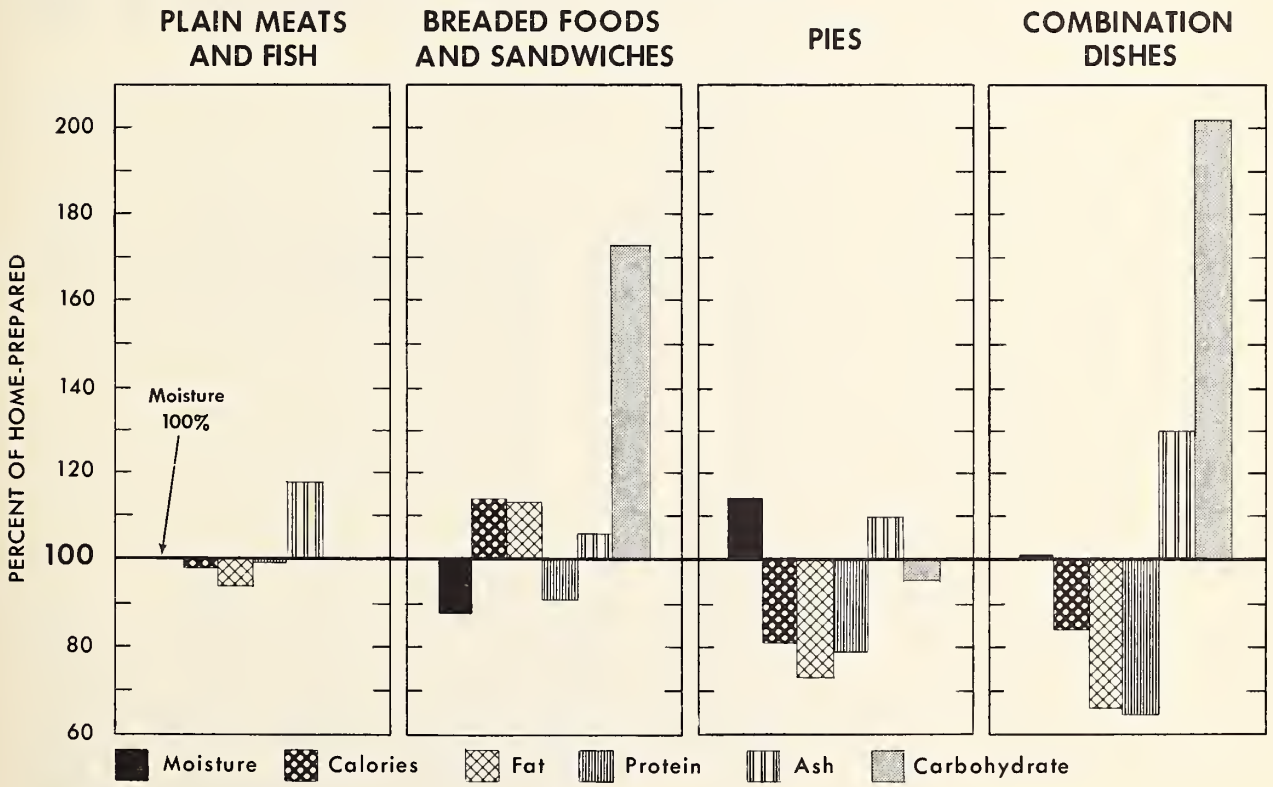

FIGURE 12.—Proximate composition and caloric values of commercial forms of main-dish foods, grouped by recipe type and expressed as percentages of values for home-prepared forms.

TABLE 14.—INDIVIDUAL UNITS OF SELECTED READY-TO-EAT MAIN-DISH FOODS: *Proximate composition and energy values*

Name and form of product	Description of unit		Moisture	Food energy	Fat	Protein	Ash	Carbohydrate (by difference)
	Quantity	Weight						
Meat patties and links:								
Beef patty:		*Grams*	*Grams*	*Calories*	*Grams*	*Grams*	*Grams*	*Grams*
Canned	1 patty	35	21.5	72	4.2	8.0	1.0	----------
Frozen	do	38	18.9	124	9.4	9.3	.3	----------
Pork sausage link:								
Canned	1 link	8	3.5	31	2.6	1.5	.3	0.1
Frozen	do	17	6.8	72	6.4	2.8	.5	.5
Sandwiches:								
Beef barbecue:								
Home-prepared	1 sandwich	138	73.6	293	9.4	20.0	3.3	31.7
Frozen	do	138	58.5	400	17.8	16.3	2.1	43.3
Pizza:								
Home-prepared	1 serving	235	113.5	557	19.5	28.2	7.3	66.5
Chilled	1 pizza, 9-inch	235	106.2	569	13.6	23.7	5.4	86.1
Frozen	1 serving	235	106.2	616	23.5	25.1	5.6	74.6
Turkey	1 sandwich	91	41.7	224	5.7	14.9	1.4	27.3
Dinners and main courses:								
Beef main course, frozen	1 main course	255	194.6	278	8.2	33.2	3.3	15.7
Meat-loaf main course, frozen	do	278	204.1	375	20.0	27.2	5.0	21.7
Codfish-stick dinner:								
Home-prepared	1 dinner	225	148.3	369	14.6	25.0	2.9	34.2
Frozen	do	232	151.7	378	14.4	22.0	3.2	40.7
Haddock dinner:								
Home-prepared	do	323	245.2	381	17.1	26.5	3.6	30.6
Frozen	do	327	249.8	366	14.1	33.7	3.9	25.8
Fried chicken dinner, frozen	do	[1] 278	183.8	481	23.6	35.6	3.9	31.1
Turkey dinner, frozen	do	354	264.4	400	10.6	29.4	4.2	45.4

Pies:								
Beef:								
Home-prepared	1 serving	216	116.6	538	30.7	24.4	3.7	40 6
Frozen	1 pie, 5-inch	216	136.9	404	19.7	17.7	3.7	38.0
Tuna:								
Home-prepared	do	221	106.1	656	41.3	19.9	3.1	50.6
Frozen	do	221	126.6	511	29.4	18.1	4.2	42.7
Chicken:								
Home-prepared	1 serving	219	128.1	497	28.9	21.9	3.1	37.0
Frozen	1 pie, 5-inch	219	135.6	447	23.9	16.2	3.1	40.2
Combination dishes:								
Chicken chow mein:								
Home-prepared:								
Chow mein	⅔ cup	155	120.9	160	6.7	19.2	2.5	5.7
Canned fried noodles	do	33	.4	166	7.8	4.5	1.4	19.0
Chow mein and noodles	1 serving	188	121.3	326	14.5	23.7	3.9	24.7
Canned:								
Chow mein	⅔ cup	155	137.6	57	.2	4.0	2.2	10.8
Canned fried noodles	do	33	.4	166	7.8	4.5	1.4	19.0
Chow mein and noodles	1 serving	188	138.0	223	8.0	8.5	3.6	29.8
Frozen:								
Chow mein	⅔ cup	155	138.3	60	.9	4.0	2.3	9.3
Canned fried noodles	do	33	.4	166	7.8	4.5	1.4	19.0
Chow mein and noodles	1 serving	188	138.7	226	8.7	8.5	3.7	28.3
Chicken fricassee:								
Home-prepared:								
Fricassee	½ cup	117	83.4	190	10.9	18.0	1.1	3.7
Biscuit, unbuttered [2]	1 biscuit	41	9.9	157	7.0	3.1	.7	20.3
Fricassee and biscuit	1 serving	158	93.3	347	17.9	21.1	1.8	24.0
Canned:								
Fricassee	½ cup	117	97.1	94	3.6	7.5	1.5	7.1
Biscuit, unbuttered [2]	1 biscuit	41	9.9	157	7.0	3.1	.7	20.3
Fricassee and biscuit	1 serving	158	107.0	251	10.6	10.6	2.2	27.4

[1] Weight as given is without bone.

[2] Weight and composition data for home-prepared biscuit, taken from Matthews and others (*18*).

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APPENDIX

Beef Products: Ingredients, Label Information, and Preparation Procedures

Beef barbecue sandwich—chopped beef

Home-prepared:	*Weight in ounces*
Brown sugar	0.40
Dry mustard	.05
Salt	.09
Celery	2.52
Onion	.75
Vinegar	.48
Catsup	6.38
Beef fat	.21
Beef broth	2.57
Beef, cooked [1]	10.49
Buns, ready-to-eat	8.11
Total ingredients	32.05

[1] To cook the meat, place a 3- to 4-pound boneless beef pot roast and 1 or more cups of water as needed in a heavy covered pan. Cook slowly over low heat—about 2½ hours. Remove from broth. Chop the amount of meat required for the sandwich filling; refrigerate remaining meat.

Combine all of the sauce ingredients except the beef; heat 10 minutes. Add the beef and heat 5 minutes longer. Serve between halves of buns.

Purchased:

Canned:

Beef, salt, and barbecue sauce ingredients (tomato paste, water, vegetable oil, vinegar, brown sugar, onions, salt, and spices).

Open the bag of barbecue sauce and combine it with the meat and meat juices; break the meat into small pieces. Heat slowly for 10 minutes, stirring frequently to prevent sticking. Serve between halves of buns.

Frozen:

Beef with sauce made of sweet peppers, chopped cucumbers, tomato paste, spices, flavorings, vinegar, salt, and sugar, placed on an enriched bun.

Thaw sandwiches in the package at room temperature for 5 hours or preheat oven to 425° F., open foil covering, place sandwiches in oven, reduce oven setting to 300°F., and heat sandwiches for 25 minutes.

Beef barbecue sandwich—sliced beef

Purchased, chilled:

Beef, barbecue sauce (consisting of catsup, water, tomato paste, flavoring, vinegar, gelatin, brown sugar, salt, and monosodium glutamate).

Place bag containing sliced beef in sauce in boiling water; simmer 5 minutes. Serve between halves of buns.

Beef dinner

Purchased, frozen:

Cooked beef, beef broth, potatoes, peas, water, carrots, butter, flour, cornstarch, salt, tomato paste, dry whole milk, caramel coloring, onions, and spices.

Heat for 30 minutes at 450° F. (hot oven).

Beef main course

Purchased, frozen:

Cooked beef, potatoes, beef broth, water, onions, carrots, butter, enriched wheat flour, beef fat, salt, celery, vegetable oil, starch, beef extract, sugar, caramel coloring, monosodium glutamate, parsley, garlic, and spices.

Heat for 25 minutes at 450° F. (hot oven).

Beef patties

Purchased:

Canned:

Beef gravy (water, tomato puree, flour, caramel coloring and flavoring), salt, and onions.

Heat patties in frying pan for 5 minutes on medium-low heat.

Frozen:

Finely chopped beef, whipped creamery butter, and monosodium glutamate.

Place patties buttered side down on preheated griddle. Heat 1 minute; turn; continue cooking until well-done, approximately 9 minutes.

Beef pie

Home-prepared:	*Weight in ounces*
Filling:	
Carrots, cubed	1.82
Onions, chopped	.38
Potatoes, cubed	1.92
Peas, frozen	1.78
Beef, cooked	5.00
Gravy:	
Fat	1.31
Flour	.77
Broth and vegetable liquid	12.34
Cooked gravy	10.22
Cooked filling	20.34
Pastry:	
Flour, sifted	3.35
Salt	.07
Shortening	1.76
Water, cold	1.19
Weight of unbaked 9-inch pie	26.71

Cook carrots, onions, and potatoes in boiling, salted water for 5 minutes. Add peas; continue cooking for 5 minutes or until vegetables are almost tender. Drain; reserve liquid for gravy. For the gravy, melt the fat and blend in the flour; slowly stir in liquid. Cook, stirring constantly, until thickened and smooth. Add cooked beef and vegetables. For the pastry, sift flour with salt; cut in shortening until mixture is granular; sprinkle water over mixture, blending lightly with fork; add water sparingly until dough clings together but is not wet. Chill. Roll into a circle about 10 inches in diameter and ⅛ inch thick. Pour filling into piepan; cover with pastry. Trim and seal edges; prick top. Bake for 35 minutes at 425° F. (hot oven).

Purchased, frozen:

Beef broth, cooked beef, water, carrots, peas, potatoes, tomato puree, flour, cornstarch, onions, salt, monosodium glutamate, caramel coloring, and spices, in a crust of flour, shortening, milk, sugar, and salt.

Cut slits in top crust. Bake at 425° F. (hot oven) until crust browns and filling is bubbly, 30 to 40 minutes.

Beef stew

Home-prepared:	*Weight in ounces*
Beef	15. 83
Flour	. 76
Fat	. 40
Pepper (¼ teaspoon)	-----
Salt	. 30
Water	25. 29
Carrots, sliced	8. 49
Onions, sliced	5. 64
Potatoes, sliced	13. 54
Peas, frozen	4. 92
Total ingredients	75. 17

Cut meat into 1-inch cubes. Roll meat cubes in flour and brown in fat in a heavy saucepan. Add the pepper and one-half of the salt. Add water, cover, and simmer until meat is almost tender. Add carrots, onions, potatoes, and the rest of the salt. Cover and simmer 15 minutes, stirring occasionally to prevent sticking. Add peas; simmer covered until vegetables are tender.

Purchased, canned:

Potatoes, beef broth, cooked beef, water, beef suet, dehydrated carrots, cornstarch, salt, onion, monosodium glutamate, caramel coloring, and flavoring.

Heat beef stew to boiling in saucepan on medium-low heat, about 12 minutes. Stir occasionally during heating to prevent sticking.

Meat loaf

Home-prepared:	*Weight in ounces*
Beef, ground	32. 02
Sausage, pork	8. 00
Tomatoes, canned	8. 23
Onions, chopped	2. 39
Celery, chopped	1. 18
Parsley, chopped	. 24
Egg	1. 69
Salt	. 14
Bread crumbs, soft	1. 60
Total ingredients	55. 49

Mix all ingredients together thoroughly. Pack mixture into a loaf pan. Bake at 350° F. (moderate oven) 1¾ hours.

Meat-loaf dinner

Purchased, frozen:

Beef, potatoes, water, pork, beef broth, tomatoes, corn, peas, carrots, tomato paste, bread crumbs, butter, whole eggs, lima beans, green beans, dry whole milk, salt, flavorings, cornstarch, dehydrated onions, monosodium glutamate, and sugar.

Heat for 30 minutes at 450° F. (hot oven).

Meat-loaf main course

Purchased, frozen:

Beef, green beans, tomatoes, skim milk, beef fat, tomato paste, enriched bread crumbs, onions, water, butter, sugar, salt, starch, monosodium glutamate, parsley, spice, garlic, and flavoring.

Turn back corner of the foil cover before heating. Heat for 25 minutes at 450° F. (hot oven).

Fish and Shellfish Products: Ingredients, Label Information, and Preparation Procedures

Codfish-stick dinner

Home-prepared:	*Weight in ounces*
Fish sticks:	
Cod fillets, skinless, frozen	15. 44
Salt	. 25
Egg	2. 88
Milk	. 62
Dry bread crumbs	3. 50
Fat consumed in frying	2. 12
French-fried potatoes:	
Potatoes	12. 96
Fat consumed in frying	. 75
Peas, frozen	10. 08
Total ingredients	48. 60

For the fish sticks, cut frozen fish block crosswise into 20 fish sticks. Combine salt, egg, and milk. Dip fish sticks in egg mixture and roll in crumbs. Fry in a basket in deep fat, 375° F., for 3 to 4 minutes or until brown. Drain on absorbent paper.

For the french-fried potatoes, cut potatoes into strips. Fry in a basket in deep fat, 375° F., for 10 to 12 minutes or until brown. Drain on absorbent paper.

For the peas, place frozen peas in boiling, salted water. Cover and return to the boiling

point. Cook for 5 to 7 minutes or until peas are tender.

Purchased, frozen:

Cod fillets, fresh green peas, potatoes, bread crumbs, flour, nonfat milk solids, pure vegetable shortening, monosodium glutamate, starch, and seasonings.

Turn back the aluminum foil cover so that only the peas remain covered. Heat for 25 minutes at 375° F. (moderate oven).

Codfish sticks, fried

Home-prepared:	*Weight in ounces*
Cod fillets, skinless, frozen	16. 08
Salt	. 12
Egg, beaten	1. 12
Milk	. 25
Dry bread crumbs	2. 00
Fat consumed in frying	1. 96
Total ingredients	21. 53

Cut frozen fish blocks crosswise into 20 fish sticks. Combine salt, egg, and milk. Dip fish sticks in egg mixture and roll in crumbs. Fry in a basket in deep fat, 375° F., for 3 to 4 minutes or until brown. Drain on absorbent paper.

Purchased, frozen:

Cod, toasted wheat, corn and wheat flours, eggs, nonfat milk solids, salt, monosodium glutamate, and pure vegetable oil.

Place frozen fried fish sticks in a single layer on a baking pan. Heat for 15 to 20 minutes at 400° F. (hot oven).

Fish flakes

Home-prepared:	*Weight in ounces*
From cod fillets:	
Cod fillets, skinless, frozen	17. 25

Cut frozen fish block crosswise into 3 pieces. Place in boiling, salted water. Cover and return to the boiling point; simmer for 10 minutes or until fish flakes easily when tested with a fork. Drain. Flake.

From haddock fillets:	*Weight in ounces*
Haddock fillets, skinless, frozen	15. 42

Cut frozen fish block crosswise into 3 pieces. Place in boiling, salted water. Cover and return to the boiling point; simmer for 10 minutes or until fish flakes easily when tested with a fork. Drain. Flake.

Purchased, canned:

Codfish and/or haddock, salt, and sodium metaphosphate. Drain.

Haddock dinner

Home-prepared:	*Weight in ounces*
Haddock fillets, skinless, thawed	12. 95
Sauce:	
Onion, chopped	. 50
Margarine, melted	1. 00
Flour	. 62
Salt	. 25
Milk	10. 62
Lemon juice	1. 00
Egg yolk	. 75

Haddock dinner—Continued

Home-prepared—Continued	*Weight in ounces*
Mashed potatoes:	
Potatoes	10. 43
Milk	2. 25
Butter	. 25
Salt	. 02
Butter	. 38
Buttered peas:	
Peas, frozen	10. 00
Butter	. 38
Total ingredients	51. 40

Thaw frozen fillets and divide into portions. Place fish in a baking pan, 10 x 6 x 2 inches. To make the sauce, cook onion in margarine until tender. Blend in flour and salt. Add milk gradually and cook until thick, stirring constantly. Remove from heat. Add lemon juice and egg yolk. Stir until well blended. Pour over fish. Bake for 20 minutes at 350° F. (moderate oven) or until fish flakes easily when tested with a fork.

For the mashed potatoes, cook potatoes in boiling, salted water for 20 minutes or until potatoes are tender. Drain. Add milk, butter, and salt; beat until fluffy. Garnish with butter.

For the peas, place frozen peas in boiling, salted water. Cover and return to the boiling point. Cook for 5 to 7 minutes or until peas are tender. Add butter.

Purchased, frozen:

Haddock, potatoes, peas, nonfat dry milk (skim milk powder), egg yolks, enriched wheat flour, onions, salt, lemon juice, starch, spice, and water.

Turn back the aluminum foil cover so that only the fish is exposed. Heat for 25 minutes at 450° F. (very hot oven).

Haddock fish sticks, fried

Home-prepared:	*Weight in ounces*
Haddock fillets, skinless, frozen	15. 79
Salt	. 10
Egg	1. 00
Milk	. 34
Dry bread crumbs	1. 92
Fat consumed in frying	1. 79
Total ingredients	20. 94

Cut frozen fish block crosswise into 20 fish sticks. Combine salt, egg, and milk. Dip fish sticks in egg mixture and roll in crumbs. Fry in a basket in deep fat, 375° F., for 3 to 4 minutes or until brown. Drain on absorbent paper.

Purchased, frozen:

Haddock, toasted wheat, wheat flour, corn flour, dried eggs, nonfat milk solids, salt, spices, leavening, vegetable oil, and monosodium glutamate.

Place frozen fried fish sticks in a single layer on a baking pan. Heat for 15 to 20 minutes at 400° F. (hot oven).

Salmon

Home-prepared:	*Weight in ounces*
Salmon steaks	16. 13

Place frozen steaks in boiling, salted water. Cover and return to the boiling point.

Simmer for 10 minutes or until fish flakes easily when tested with a fork. Drain. Remove skin and bones. Flake.

Purchased, canned:

Lightly seasoned with salt. Drain. Remove skin and bones.

Tuna pie

Home-prepared:	*Weight in ounces*
Tuna, canned, drained	11. 46
Peas, frozen	10. 08
Sauce:	
Onion	. 75
Margarine, melted	. 75
Flour	1. 00
Salt	. 12
Milk	21. 38
Pastry:	
Flour	15. 00
Salt	. 18
Shortening	11. 62
Water, cold	5. 38

Drain tuna. Flake.

For the peas, place frozen peas in boiling, salted water. Cover and return to the boiling point. Cook for 5 to 7 minutes or until peas are tender.

For the sauce, cook onion in margarine until tender. Blend in flour and salt. Add milk gradually and cook until thick, stirring constantly. Add tuna and peas.

For the pastry, sift flour with salt; cut in shortening until mixture is granular; sprinkle water over mixture, blending lightly with fork; add water sparingly until dough clings together but is not wet. Chill. Roll a little more than half the dough about ⅛ inch thick. Cut into 8 circles, 6½ inches each. Line 8 piepans, 5 inches in diameter. Fill pies with tuna mixture. Roll remaining dough about ⅛ inch thick. Cut into 8 circles, 5¼ inches each. Place tops on pies. Trim and seal edges, prick tops. Bake at 425° F. (hot oven) for 30 minutes or until crust is golden brown.

Purchased, frozen:

Tuna, peas, sweet red peppers, and onions in a sauce composed of water, shortening, nonfat dry milk, flour, starch, salt, butter, monosodium glutamate, seasoning, and liquid turmeric, within a crust consisting of flour, shortening, water, sugar, and salt.

Cut slits in top crust. Bake at 425° F. (hot oven) for 30 minutes or until crust browns and filling is bubbly.

Crabcakes

Home-prepared:	*Weight in ounces*
Crabmeat	15. 13
Onion, chopped	. 50
Margarine, melted	. 62
Egg, beaten	1. 75
Powdered mustard (½ teaspoon) Salt (½ teaspoon) Pepper (dash) Cayenne pepper (dash)	. 12
Dry bread crumbs	1. 62
Fat consumed in frying	3. 38
Total ingredients	23. 12

Remove any shell or cartilage from crabmeat. Cook onion in margarine until tender. Combine all ingredients except crumbs. Shape into 6 cakes and roll in crumbs. Place cakes in a heavy frying pan that contains about ⅛ inch of fat, hot but not smoking. Fry at moderate heat. When cakes are brown on one side, turn carefully and brown the other side. Cooking time approximately 5 to 8 minutes. Drain on absorbent paper.

Purchased, frozen:

Crabmeat, bread crumbs, mayonnaise, eggs, oleomargarine; parsley, and spices.

Place frozen crabcakes in a heavy frying pan that contains about ⅛ inch of fat, hot but not smoking. Fry at moderate heat. When cakes are brown on one side, turn carefully and brown the other side. Cooking time approximately 5 to 8 minutes. Drain on absorbent paper.

Crabmeat

Purchased:

Cooked, chilled:

Remove any shell or cartilage from crabmeat.

Canned:

Drain. Remove any shell or cartilage from crabmeat.

Crab, deviled

Home-prepared:	*Weight in ounces*
Crabmeat	15. 46
Onion, chopped	. 75
Margarine, melted	1. 38
Flour	. 62
Milk	6. 12
Salt	. 12
Powdered mustard	. 04
Worcestershire sauce	. 50
Sage	. 04
Lemon juice	. 62
Egg, beaten	2. 00
Parsley, chopped	. 12
Margarine, melted	. 62
Dry bread crumbs	. 88
Total ingredients	29. 27

Remove any shell or cartilage from crabmeat. Cook onion in the 1.38 ounces of margarine until tender. Blend in flour. Add milk gradually and cook until thick, stirring constantly. Add seasonings and lemon juice. Stir a little of the hot sauce into egg; add to remaining sauce, stirring constantly. Add parsley and crabmeat. Place in well-greased, individual shells or 5-ounce custard cups. Combine 0.62 ounce margarine and the crumbs; sprinkle over top of each shell. Bake at 350° F. (moderate oven) for 15 to 20 minutes or until brown.

Purchased, frozen:

Lump crabmeat, bread crumbs, whole milk, creamery butter, flour, nonfat milk solids, pure vegetable shortening, parsley, spices, monosodium glutamate, starch, and seasonings.

Place frozen deviled crabs on a baking pan. Bake at 400° F. (hot oven) for 20 minutes or until crisp.

Shrimp

Home-prepared:	*Weight in ounces*
Raw shrimp in shell	15. 58

Wash shrimp. Place in boiling, salted water. Cover and return to the boiling point. Simmer for 5 minutes. Drain. Peel. Remove sand veins. Rinse. Drain.

Purchased:

Canned:

Water and salt added.

Drain. Remove sand veins. Rinse. Drain.

Chilled, cooked, peeled, deveined:

Remove any remaining sand veins. Rinse and drain.

Frozen, raw, peeled, deveined:

Place frozen shrimp in boiling, salted water. Cover and return to the boiling point. Simmer for 5 minutes. Drain.

Shrimp, breaded, fried

Home-prepared: From raw shrimp in shell:	*Weight in ounces*
Raw shrimp in shell	14. 92
Eggs, beaten	3. 50
Salt	. 25
Flour	2. 25
Dry bread crumbs	1. 62
Fat consumed in frying	1. 55
Total ingredients	24. 09

Peel shrimp, leaving the last section of the shell on. Cut lengthwise and remove sand veins. Wash. Combine egg and salt. Dip shrimp in egg, and roll in flour-and-crumb mixture. Fry in a basket in deep fat, 350° F., for 2 to 3 minutes or until brown. Drain on absorbent paper.

From frozen shrimp, raw, peeled, deveined:	*Weight in ounces*
Shrimp, raw, peeled, deveined	13. 21
Eggs, beaten	3. 50
Salt	. 25
Flour	2. 25
Dry bread crumbs	2. 00
Fat consumed in frying	1. 57
Total ingredients	22. 78

Thaw and wash shrimp. Drain. Combine egg and salt. Dip each shrimp in egg and roll in flour-and-crumb mixture. Fry in a basket in deep fat, 350° F., for 4 to 6 minutes or until brown. Drain on absorbent paper.

Purchased:

Frozen, raw, breaded:

Shrimp, cracker meal, toasted wheat flour, corn flour, dry milk, salt, leavening, vegetable stabilizer, whole eggs, spices, and monosodium glutamate.

Fry raw, frozen, breaded shrimp in a basket in deep fat, 350° F., for 4 to 5 minutes or until brown. Drain on absorbent paper.

Frozen, prefried:

Shrimp, fresh egg batter, salted cracker meal, wheat flour, and pure vegetable oil.

Place frozen, fried, breaded shrimp in a single layer on a baking pan. Heat for 15 minutes at 400° F. (hot oven).

Shrimp creole

Home-prepared:	*Weight in ounces*
Raw shrimp in shell	23. 00
Onion, chopped	1. 50
Green pepper, chopped	1. 50
Garlic, finely chopped	. 07
Margarine, melted	2. 00
Flour	. 87
Chili powder	. 13
Salt	. 13
Tomatoes, canned	17. 88
Rice, cooked	12. 12
Total ingredients	59. 20

Peel shrimp and remove sand veins. Wash. Drain. Cut large shrimp in half. Cook onion, green pepper, and garlic in margarine until tender. Blend in flour and seasonings. Add tomatoes and cook until thick, stirring constantly. Add shrimp and simmer, uncovered, for 20 minutes. Add rice.

Purchased, frozen:

Shrimp, onions, tomato puree, rice, sweet pepper, celery, bean sprouts, vegetable oil, salt, and spices. Coloring added.

Heat for 20 to 22 minutes at 450° F. (hot oven).

Pork Products: Ingredients, Label Information, and Preparation Procedures

Ham, cured

Home-prepared: Cook-before-eating:	*Weight in ounces*
Ham, before cooking	113. 58

Place ham, fat side up, on a rack in a shallow pan. Roast uncovered at 325° F. (slow oven) until the internal temperature of the meat reaches 160° F.

Purchased: Fully cooked, chilled:	*Weight in ounces*
Ham, before heating	113. 41

Place ham, fat side up, on a rack in a shallow pan. Heat uncovered at 325° F. (slow oven) until the internal temperature of the meat reaches 130° F.

Canned, boneless ham in natural juices, gelatin added:	*Weight in ounces*
Ham, undrained, before heating	196. 28

Remove from can and drain off broth and gelatin. Place ham on a rack in a shallow pan. Heat uncovered at 325° F. (slow oven)

until the internal temperature of the meat reaches 140° F.

Sausage, pork

Purchased:

Canned:

Pork, water, salt, flavorings, sugar, sodium nitrate, and sodium nitrite.

Place can in hot water 10 minutes, open can; drain links and place them on broiler pan. Broil 3 minutes.

Frozen:

Pork, beef, water, salt, sugar, spices, sodium nitrate, and sodium nitrite.

Place frozen links in a preheated frying pan; heat for 5 minutes, turning frequently to brown evenly.

Poultry Products: Ingredients, Label Information, and Preparation Procedures

Chicken

Purchased, canned:

Chicken, chicken broth, salt, and monosodium glutamate.

Place can in hot water for 10 minutes; drain off broth and remove chicken whole. Remove meat from bones.

Chicken meat

Purchased, canned:

Chicken, chicken broth, salt, and monosodium glutamate.

Place can in hot water for 5 minutes. Drain off broth and remove meat.

Chicken chow mein

Home-prepared:	*Weight in ounces*
Chicken, cooked, diced [1]	7. 94
Corn oil	. 43
Salt	. 06
Onion	1. 40
Celery	2. 38
Mushrooms, canned, sliced	1. 55
Bean sprouts, canned	4. 35
Chicken broth	6. 03
Cornstarch	. 09
Water	. 23
Soy sauce	. 56
Sugar	. 16
Noodles	4. 48
Total ingredients	29. 66

[1] To cook chicken, put cut-up chicken in a pan and add hot water just to cover. Cover the pan and cook over low heat until done, about 1½ hours. Remove from broth. Chop the amount of chicken required for the sandwich filling; refrigerate remaining chicken.

Brown cooked, diced chicken lightly in frying pan in oil over medium-low heat. Add salt, onion, celery, mushrooms, and drained bean sprouts and cook 2 minutes. Add broth and cook 15 minutes. Mix cornstarch and water to a paste; slowly add to the chicken and vegetables, stirring until thickened. Add soy sauce and sugar; stir until dissolved. Serve over noodles.

Purchased:

Canned:

Bean sprouts, chicken broth, celery, onions, chicken, starch, sweet red peppers, sugar, salt, dextrose, chicken fat, monosodium glutamate, and spices.

Heat chow mein to boiling in saucepan on medium-low heat (about 10 minutes). Stir occasionally during heating to prevent sticking. Serve over noodles.

Frozen:

Chicken broth, celery, bean sprouts, chicken, onions, mushrooms, starch, sweet red peppers, water chestnuts, chicken fat, sugar, salt, hydrolyzed vegetable protein, monosodium glutamate, and spices.

Heat chow mein to boiling in lightly oiled saucepan at medium-low heat (19 to 28 minutes). Stir occasionally during heating to prevent sticking. Serve over noodles.

Packaged combination:

Chow mein noodles (flour, water, vegetable shortening, yeast, and salt). Chicken chop suey (chicken broth, celery, bean sprouts, chicken, cornstarch, water chestnuts, mushrooms, tomato puree, onions, peppers, bamboo shoots, salt, sugar, with monosodium glutamate and seasoning).

Heat canned chop suey in top of double boiler; add soy sauce; cover and heat 10 minutes, stirring occasionally. Serve over noodles.

Chicken dinner (fried)

Purchased, frozen:

Portion of breast and shoulder, drumstick or thigh, wing of chicken, potatoes, water, peas, carrots, corn, green beans, butter, shortening, lima beans, nonfat dry milk, enriched flour, oat flour, salt, chicken skin, yeast extract, and spice, packed in an individual aluminum tray.

Heat for 25 to 30 minutes at 450° F. (hot oven). Keep covered until the last 10 minutes of cooking, then uncover to brown.

Chicken, fricassee

Home-prepared:	*Weight in ounces*
Chicken	31. 59
Salt	. 14
Gravy:	
Broth, chicken	13. 11
Butter and chicken fat	1. 68
Flour	. 97
Total ingredients	47. 49

Clean and disjoint chicken. Simmer until tender in salted water to cover. Drain broth from chicken and remove fat from broth. Remove chicken meat from bones and skin.

For the gravy, blend fat and flour; slowly stir in broth. Cook, stirring constantly until slightly thickened. Add to chicken meat.

Purchased, canned:

Chicken in gravy consisting of broth, water, flour, butter, salt, starch, and seasoning.

Heat chicken fricassee in a double boiler for 45 minutes.

Chicken, fried

Home-prepared:

Flour-coated:

From chilled chicken:

	Weight in ounces
Chicken	41. 82
Flour, salt	2. 07
Fat consumed in frying	1. 74
Total ingredients	45. 63

Place the cleaned chicken pieces in a bag containing ¾ cup of flour and 1½ teaspoons salt. Fry in 1 cup of cooking oil in a preheated frying pan. Cook uncovered for 20 minutes on each side.

Batter-dipped:

From chilled chicken:

	Weight in ounces
Chicken	38. 74
Flour	1. 52
Salt	. 03
Pepper (⅛ teaspoon)	
Egg	. 70
Milk	2. 33
Fat consumed in frying	2. 27
Total ingredients	45. 59

Clean and dry chicken pieces. Dip in thin batter made by blending flour, salt, egg, and milk. Preheat cooking oil in deep fryer to 350° F. and fry chicken pieces until golden brown. Remove from fat, drain, and bake in an uncovered pan for 30 minutes at 325° F. (slow oven).

From frozen chicken:

	Weight in ounces
Chicken	25. 27
Flour	. 96
Salt	. 02
Pepper (⅛ teaspoon)	
Egg	. 44
Milk	1. 46
Fat consumed in frying	. 74
Total ingredients	28. 89

Thaw unopened package of chicken in the refrigerator. Clean and wipe dry. Proceed as for batter-dipped from chilled chicken.

Purchased, frozen, prefried batter-dipped:

One chicken without giblets, flour, shortening, nonfat dry milk solids, salt, and seasoning.

Place unthawed chicken in a single layer in roasting pan. Cover. Heat for 15 minutes at 425° F. (hot oven). Uncover, heat for 15 minutes longer.

Chicken pie

Home-prepared:

	Weight in ounces
Filling:	
Carrots	2. 55
Peas, frozen	2. 68
Onion	. 12
Chicken fat	. 60
Flour	. 69
Chicken broth	9. 55
Cream	2. 91
Chicken, cooked, diced	4. 60
Salt	. 08
Cooked filling	21. 28
Pastry:	
Flour	3. 20
Salt	. 08
Shortening	1. 66
Water	1. 15
Weight of unbaked 9-inch pie	27. 37

Cook the carrots for 5 minutes in a small amount of boiling, salted water; add frozen peas and cook an additional 5 minutes. Drain, reserve liquid for gravy if needed.

For the filling, brown onion lightly in fat and blend in the flour; slowly stir in broth and cream. Cook, stirring constantly, until thickened and smooth. Add cooked carrots, peas, chicken, and salt. Heat for 5 minutes. Pour into piepan.

For the pastry, sift flour with salt; cut in shortening until mixture is granular. Sprinkle water over mixture, blending lightly with fork; add water sparingly until dough clings together but is not wet. Chill. Roll pastry to a circle approximately 10 inches in diameter and ⅛ inch thick. Place pastry over filling, trim edges, prick top. Bake 35 minutes at 425° F. (hot oven).

Purchased:

Chilled:

Chicken broth, chicken meat, potatoes, carrots, peas, celery, onions, wheat flour, salt, monosodium glutamate, sugar, flavoring, and turmeric. In a crust of wheat flour, shortening, water, corn sugar, salt, leavening, and sodium propionate; glazed with egg yolk wash.

Bake for 30 minutes at 350° F. (moderate oven).

Frozen:

Chicken broth, chicken, peas, carrots, flour, chicken fat, cornstarch, salt, corn sugar, onion powder, flavorings, monosodium glutamate, and turmeric. In a crust of flour, shortening, water, corn sugar, and salt.

Heat for 35 minutes at 425° F. (hot oven).

Turkey dinner

Purchased, frozen:

Turkey meat (turkey meat, salt, and monosodium glutamate); Giblet gravy (turkey stock, skin, giblets, fat, flour, starch, salt,

seasoning, monosodium glutamate, caramel coloring, and turmeric); Dressing (water, bread, cornmeal, celery, shortening, onion, salt, seasoning, and calcium propionate); Peas (peas, butter, and salt); Potato (potato, butter, and salt).

Heat for 30 to 35 minutes at 450° F. (hot oven).

Turkey main course

Purchased, frozen:

Turkey broth, potatoes, turkey meat, enriched bread crumbs, onions, vegetable oil, butter, celery, nonfat dry milk, water, starch, enriched wheat flour, carrots, salt, parsley, monosodium glutamate, sugar, caramel coloring, spice, lactic acid, flavoring, and turmeric.

Heat for 30 minutes at 450° F. (hot oven).

Turkey sandwich

Purchased, frozen:

Turkey, butter, salt, and monosodium glutamate on enriched bun.

Thaw sandwiches at room temperature for 4 hours.

Turkey slices in gravy

Purchased, frozen:

Roasted turkey slices, giblets, turkey broth, flour, rice flour, cornstarch, baked wheat flour, salt, monosodium glutamate, onion and garlic powders, corn sugar, spices and flavoring, and caramel coloring.

Place bag containing turkey and gravy in boiling water; boil 3 minutes after water resumes boiling. Cut off top of bag to remove food to serve.

Cheese Products: Ingredients, Label Information, and Preparation Procedures

Pizza

Home-prepared:	*Weight in ounces*
Dough	11.50
Yeast, dry	.14
Water	4.42
Fat	.38
Sugar	.07
Salt	.14
Flour	6.35
Sauce	9.24
Tomatoes, canned	4.24
Tomato puree, canned	4.20
Onion	.70
Salt	.10
Pepper (1/8 teaspoon)	
Oregano (1/2 teaspoon)	
Garlic, finely minced (1/2 clove)	
Olive oil	.21
Cheese, Parmesan	3.36
Total ingredients	24.31

For the dough, add yeast to 1 tablespoon warm water; stir to dissolve and let stand 5 minutes. Dissolve fat, sugar, and salt in the rest of the water heated to boiling temperature; cool to lukewarm and add to yeast-water mixture. Add half the flour and beat until smooth; add remainder of flour; blend until smooth and soft dough is formed. Place on heavily floured board; knead lightly. Roll and press to form a large circle; place on pizza pan; press to cover pan.

For the sauce, combine tomatoes, puree, onion, salt, pepper, oregano, and garlic.

Brush dough with oil; sprinkle with one-half of the cheese. Spread sauce over dough-cheese combination; sprinkle with the remainder of the cheese. Bake for 15 minutes at 450° F. (hot oven).

Purchased:

Chilled:

Flour, tomatoes, vegetable oil, olive oil, cheese, sugar, salt, yeast, gelatin and alginate stabilizers, spices, sodium propionate, and less than 0.1 percent benzoate of soda added as preservatives.

Heat for 10 minutes at 450° F. (hot oven).

Frozen:

Flour, water, tomatoes, cheese, malt, salt, olive oil, oregano, and spices.

Add 2 tablespoons olive oil to top of pizza. Heat for 10 minutes at 450° F. (hot oven).

Packaged combination:

Pizza flour mix (wheat flour, vegetable shortening, skim milk powder, sugar, and salt), active dry yeast, pizza sauce, and Italian style hard grating cheese.

Dissolve the dry yeast in the warm water. Add flour mix to yeast; blend well. Shape dough into smooth ball; cover bowl and let stand 5 minutes in pan of warm water (85 to 90° F.). Place dough on greased pizza pan, gently press out to cover pan in thin flat crust; pinch up to form edges. Pour sauce mixture over dough; sprinkle cheese over sauce. Bake for 20 minutes at 425° F. (hot oven).

Spaghetti with cheese in tomato sauce

Home-prepared:

Sauce:	*Weight in ounces*
Onion	2. 75
Garlic	. 10
Black pepper	. 04
Olive oil	1. 78
Tomato paste, canned	3. 96
Water	11. 67
Tomatoes, canned	20. 76
Salt	. 14
Sugar	. 42
Spaghetti, dry	7. 91
Water, absorbed in cooking (3 quarts used)	14. 89
Cheese, Parmesan	1. 54
Total ingredients	65. 96

For the sauce, lightly brown onion with garlic and black pepper in olive oil over medium heat. Combine tomato paste with water and add to onion in three installments, allowing mixture to boil after each addition. Add tomatoes and salt; simmer uncovered over low heat for 45 minutes. Remove garlic, add sugar; simmer 15 minutes longer, strain. Stir spaghetti into boiling, salted water. Boil uncovered 12 minutes, stirring often; drain. Add sauce and cheese.

Purchased:

Canned:

Cooked spaghetti, tomatoes, sugar, salt, vegetable oil, cornstarch, cheese flavoring, citric acid, and sufficient water to prepare properly.

Heat to boiling over low heat about 10 minutes. Stir occasionally during heating to prevent sticking.

Packaged combination:

Spaghetti (no artificial coloring); grated Parmesan cheese, dehydrated vegetables (onion, garlic, celery, and beet), salt, potato starch, monosodium glutamate, hydrolyzed vegetable protein, sugar, spices, and flavorings.

Combine spaghetti sauce mix, tomato paste, water, and 1 tablespoon margarine; bring to a boil, stirring occasionally. Simmer gently for 10 minutes. Add spaghetti slowly to boiling, salted water. Boil uncovered, stirring occasionally, for 10 minutes. Drain; add 1 tablespoon margarine; mix lightly. Pour hot sauce over cooked spaghetti; sprinkle with grated Parmesan cheese.

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